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ABSTRACT

Corruption represents a complex problem firmly embedded within our societal structures, governments, and organizations. The current study aimed to build a clearer consensus on the extent to which perceptions of organizational corruption are associated with organizational hierarchy. Two high-powered close replications of studies 1c and 6 by Fath and Kay provide further evidence for the claim that taller organizational structures are associated with greater perceived potential for corruption, and that these perceptions may compromise subsequent trust-related outcomes. Our results reinforce the importance of organizational design and aim to inspire future works to consider the ways in which researchers and organizations can minimize corruption. Preregistration, data and materials can be found on the OSF: <https://osf.io/zb5j2>.

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KEYWORDS

Corruption; hierarchy; organisational design; organisational structure; replication

Introduction

Corruption

Corruption is a controversial and pervasive global issue (Aguilera & Vadera, 2008) as evidenced by the United Nations report from 2022 which found evidence of corruption in every world region, with nearly one in six businesses reporting bribe requests from public officials (United Nations Statistics Division, 2022). Corruptions, and perceptions of corruption, can be highly problematic for business as perceived transparency and ethicality increase consumers' trust and consequently trust-related behaviors such as intention to purchase or brand loyalty (Kang & Hustvedt, 2014; Singh, Iglesias, & Batista-Foguet, 2012). Corruption can also compromise

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democracy (Warren, 2004) and as such, reducing corruption and bribery is a core priority (target 16.5) of the Sustainable Development Goals formulated by the United Nations General Assembly (United Nations, 2015).

Unethical workplace behaviors, including corruption, are driven by many individual and contextual factors (Evans et al., 2022). In 2018, Fath and Kay established a link between an organizations' hierarchy and the perceived levels of corruption. This work provided initial evidence to suggest taller hierarchies (those with more levels of hierarchy e.g., management) were perceived to be more corrupt than flatter hierarchies with fewer hierarchical levels. This finding was reported in context of widely agreed strengths and weaknesses for both tall and flat hierarchical structures (Matusik, Mitchell, Hays, Fath, & Hollenbeck, 2022). For example, taller hierarchies are typically perceived as more structured and orderly (Friesen, Kay, Eibach, & Galinsky, 2014), efficacious (Fath, Proudfoot, & Kay, 2017) and are considered to be "normal" and are thus generally endorsed (Fath & Kay, 2017). Taller hierarchies have also been associated with negative outcomes however, like lower creativity and greater inequalities in outcomes depending upon level (Xu, Wu, & Evans, 2022) when compared to flatter structures.

Corruption and hierarchy

The association between corruption and hierarchy has long been recognized in the literature, with many claiming corruption to be a hierarchical phenomenon (Bac, 1996). This is based on the belief that individuals perceive status hierarchies as relatively easily changeable with various opportunities for upward mobility, leading to an increase in group members' competitive behaviors toward each other in order to move up the hierarchical ladder and acquire higher hierarchical status (Hays & Bendersky, 2015). Indeed, recently it was found that status differentiation enhances competition in team settings, suggesting the significant impact of rank comparisons on competitiveness (Hays et al., 2022; Magee & Galinsky, 2008).

Competitive behavior is proposed as the central mechanism by which hierarchy impacts perceived corruption. At the lower end of the hierarchy, employees may experience social ostracism so become more competitive, subsequently leading to greater likelihood of unethical behavior. This may be because lower ranked individuals want to get closer to the top of the hierarchy so they experience a higher status, better pay and other such benefits (Anderson & Brown, 2010). At the top of the hierarchy, power, related to one's control over valued resources, is proposed to impact individuals psychologically such that they think and act in ways that lead to the

acquisition and retention of power (Magee & Galinsky, 2008). This proposed mechanism is congruent with Keltner, Gruenfeld, and Anderson (2003) approach/inhibition theory of power, detailing how power can change psychological states. In this theory, approach related tendencies (like seeking opportunities and rewards) are activated by higher power whereas inhibition related tendencies (like self-protection and avoidance of threats) are activated by lower power (Cho & Keltner, 2020). Approach related tendencies help complete goals, leading to the benefits of being in a high-powered position, however inhibition related tendencies in lower power can cause anxiety and behaviors to avoid threat (Anderson & Berdahl, 2002). As such, in a hierarchical system where there are many levels to differentiate individuals, both tendency types could lead to corrupt behavior, with higher power leading to opportunistic behavior and lower power leading to competitive behavior (Al-Saggaf, Burmeister, & Weckert, 2015).

Hierarchies formalize levels of power and responsibility and in doing so become a salient signal of ranking. In hierarchical organizations, the range of ranks available is larger. As feedback on relative rank increases the likelihood of problematic behavior (Charness, Masclet, & Villeval, 2014), taller hierarchies are suggested to evoke greater competitive/opportunistic tendencies, and therefore greater rates of cheating, corruption and unethical behavior (Schwieren & Weichselbaumer, 2010). Competition has been linked to an increased likelihood of unethical and immoral behaviors (Pierce, Kilduff, Galinsky, & Sivanathan, 2013; Schurr & Ritov, 2016) in motivation to secure a higher hierarchical position and achieve the “benefits” associated with it. Indeed, there is convergent evidence suggesting individuals working in a competitive environment are more likely to make unethical decisions and misuse their power for personal benefits (Kilduff, Galinsky, Gallo, & Reade, 2016; Kulik, O’Fallon, & Salimath, 2008; Swab & Johnson, 2019). For example, a study conducted in Russia found that in regions with higher market competitiveness, firms tended to compete more fiercely to obtain permits and other necessary authorizations (Belousova, Goel, & Korhonen, 2016; Sharafutdinova, 2010). Furthermore, this heightened competition was associated with a greater *perception* of corruption among businessmen and politicians in those regions. The link between corruption and perceived corruption is not well-established in scope and there are noteworthy differences between perceptions and experiences of corruption (Gutmann et al., 2020), but a number of evidence sources have demonstrated corruption and its perceptions are highly correlated (e.g., Charron, 2016, Mocan, 2008). Building upon this, the link between competition and perceived corruption has also been replicated: similar findings have been proposed by a longitudinal investigation on the intra-party

competition in the Christian Democratic Party in Italy, indicating that the higher the level of competition among party politicians for political advancement, the more likely both the general public and regulators were to suspect them of engaging in corrupt practices (Golden & Chang, 2001).

Current study

To provide a clearer estimation of the extent to which perceptions of organizational corruption can be associated with organizational hierarchy, and to offer students a valuable practical opportunity to engage with replications and open scholarship (Pownall et al., 2022) in an important social domain, the current study represents a close replication of studies 1c and 6 from Fath and Kay (2018).

In study 1c, Fath and Kay (2018) used an experimental vignette design and randomly allocated 405 US MTurk workers to rate the perceived scope of corruption within an organization. They manipulated the hierarchy levels (high or low) and sociability (social or remote) of the organization. The results indicated that participants associated a taller hierarchical structure with a greater likelihood of corrupt behavior among its employees, compared to a flatter structure, however, reported no significant effect of workplace sociability on participants' perceptions of corruption.

In study 6, Fath and Kay (2018) recruited 97 participants from a US farmer's market to assess the perceived corruption of the Finance Department of the local county government, through the guise of an opinion survey. Participants were provided with a description of the finance department, randomly depicting the hierarchical structure as tall or flat. Again, participants were more inclined to believe that employees in the high-hierarchy condition engaged in more corrupt behavior compared to those in the flat-hierarchy version. Furthermore, participants in the taller hierarchical condition were more likely to (a) agree an ethics audit would be of benefit, and (b) sign a petition calling for an ethics audit, with mediation analyses identifying corruption as a significant cause of higher levels of distrust toward these taller organizations.

Fath and Kay (2018) concluded that employees working for hierarchical organizations are perceived to be more corrupt, and that this has implications for trust-related behavior toward the organization. The current study, a pedagogically-informed close replication, attempts to provide a consensus on these effects, from which further research can examine the mechanism of competition and power discussed.

The work by Fath and Kay (2018) was considered important to replicate because, despite having received 21 citations (Google Scholar, dated January 8, 2024) including a recent evidence review (Julián & Bonavia,

2020), the central claims have not received any independent verification or replication. Given the scope of international work being conducted to reduce corruption, and the potential applications of this work in flattening hierarchies, reducing hierarchy saliency and rank comparisons, or exploring mechanisms to minimize competition, the current replication of Fath and Kay (2018) holds great potential to inform impactful avenues for future intervention.

Studies 1c and 6 specifically were chosen by the students conducting the research as part of their dissertations, having considered the feasibility and practicality of each. They were chosen to represent both the primary development made by the manuscript (study 1c: the link between hierarchy and perceived corruption) and the most applied and impactful consequences (study 6: real-world trust-related behaviors).

Hypotheses

1. Perceived organizational corruption will be higher for a taller, rather than flatter, organizational structure.
2. Corruption perceptions will act a mediator between organizational structure and trust-related behavior, such that taller hierarchies will be trusted less due to greater perceived potential for corruption.

Methodology

Transparency and openness

We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study, and we follow JARS (Kazak, 2018). The study design and analysis were pre-registered (<https://doi.org/10.17605/OSF.IO/RZWH2>). Data were analyzed using Jamovi, version 2.3 (Jamovi project, 2022). All data, analysis code, and research materials are available at <https://osf.io/zb5j2>.

Design

This study received ethical approval from the University of Greenwich School of Human Sciences Research Ethics Panel. This study was preregistered on December 6, 2021 with no deviations to report. Two experimental between-participant designs (studies 1c and 6 of Fath & Kay, 2018) were chosen for close replication. Participants completed the two studies in a single session in randomized order, with the addition of two distractor tasks in-between to distract participants from the true focus of the project.

Study 1c was a very close replication of the original vignette design where the organizational hierarchy (high/low) and workplace sociability (remote/social) of a hypothetical workplace was randomly manipulated. Participants were subsequently asked to estimate the perceived scope of corruption in the organization.

Study 6 was originally conducted face-to-face under the guise of a local public opinion survey at a farmer's market in a college town in New York state. Due to COVID restrictions at the time, and geographical constraints, we adapted the materials for use in an online survey, claiming to assess the organization "Greenwich Business Liaison (GBL)" rather than "Tompkins County." We informed participants this was a real organization to make the setup more realistic for the sampled population and therefore to increase the likelihood of replicating the original effect as intended. Otherwise, the materials were very similar, where we randomly allocated participants to fact-sheets about the organization and manipulated only levels of hierarchy (low/high). As with the original study 6, we also assessed trust-related behavior (whether the participant believed an ethical audit was necessary and whether they would sign the petition to secure an audit).

Materials

All study materials were based on the original study (<https://osf.io/pe4na/>) and are available on the project OSF page: <https://osf.io/zb5j2>.

Study 1c

Participants read a description on a hypothetical organization based on one of the four conditions (high hierarchy/low hierarchy) \times (social/remote) and were asked to respond to three items assessing perceptions of corruption on a 7-item Likert scale (1) "Not at all likely" to 7) "Very likely" (Fath and Kay (2018). Internal reliability was originally high ($\alpha = 0.94$).

Study 6

Participants were provided with a hypothetical description (hierarchical/not hierarchical) on the Greenwich Business Liaison (GBL) Finance Department and asked to complete a manipulation check: "Compared to the organizations you know about, how hierarchical does the Greenwich Business liaison" (GBL) Finance Department seem to you? "on a 7-item Likert scale" (1) "Not at all" to (7) "Very likely." The participants answered two questions to assess the intelligence and capability of the employees as a control (1 "Not at all" to 7 "Very") and three questions (originally $\alpha = 0.82$) assessing corruption perceptions on a 7-item Likert scale (1) "Not at all possible" to (7) "Very

possible.” Participants were asked whether they believe an ethics audit would be justified (yes/no) and whether they would sign the petition (yes/no), but unlike the original study there was no option to add a signature.

Distractor tasks

The distractor tasks were a measure of fluid intelligence - the ICAR 9-item Letter and Number Series task (Condon & Revelle, 2014) and personality - measured through the Ten Item Personality Measure (TIPI; Gosling, Rentfrow, & Swann, 2003). The data from these distractor tasks was not analyzed in the current works but the data is openly available alongside all study data on the OSF page.

Sample

Sample size was determined before any data analysis. An a-priori power analysis was conducted using R (R Core Team, 2022) and R Studio (RStudio Team, 2020) using the package “pwr” (Champely, 2020), based upon the smallest significant effect sizes reported for our primary effect (higher corruption perceptions associated with taller organizational structures). Accepting the typical 0.05 significance level, 90% power and $d = 0.419$ effect size, 121 participants per group, or 242 participants in total, would be required. As this represents a relatively modest sample, a higher power level (95%) was targeted, for a sample size of 150 participants per group, or 300 in total. To account for the expected ~10% of careless responses (Meade & Craig, 2012), the current work aimed to collect data from a maximum of 330 participants.

Participants who did not complete all aspects of the study were automatically excluded from the analysis. To capture inattentive engagement, in line with good practices (i.e., Meade & Craig, 2012), participants were excluded if they responded “No—do not use my data” to the following question: “We want to ensure that all data we analyze is meaningful and accurately reflects engagement with the study content. In your honest opinion, should we use your data in our analyses of this study? Your response to this will have no impact or consequences to you so please do be honest.” Data was analyzed from all other participants who completed the study in full.

Participants were predominantly recruited from the UK, which represents a particularly interesting context for studying corruption given that it has recently been steadily worsening in the eyes of both expert assessors (e.g., through the Corruption Perceptions Index, Transparency International, 2022) and the UK’s general public (e.g., through recognition of government corruption in the handling of the COVID-19 pandemic; Wright, Burton, McKinlay, Steptoe, & Fancourt, 2022). All participants

volunteered and completed the study online, at their own convenience, through Qualtrics. Using a combination of a university student participation scheme and convenience sampling of personal and professional networks, 321 participants were recruited. The mean age was 25.45 ($SD = 10.79$), and the sample included 95 males, 221 females, and 5 individuals who identified with neither label.

Results

All analyses were preregistered and based upon the original study. All analyses were conducted through Jamovi version 2.3 (Jamovi project, 2022) and full annotated records are available on the project OSF page: <https://osf.io/zb5j2>.

Study 1c

Assumptions

Data from the three corruption perception items indicated a high level of reliability ($\alpha = 0.91$; $\omega = 0.91$) and were averaged to create a total score of perceived corruption ($M = 4.31$, $SD = 1.60$).

Hypothesis 1

Concurrent with the results of the original study, it was first hypothesized that participants in the high hierarchy condition would report greater perceptions of corruption than those in the low/flat hierarchy condition. As predicted, a t-test found perceptions of corruption were significantly higher ($t(319) = 5.14$, $p < .01$, $d = 0.57$, 95% CI [0.35, 0.80]) in the high hierarchy condition ($M = 4.77$, $SD = 1.37$, $N = 154$) compared to the low hierarchy condition ($M = 3.88$, $SD = 1.68$, $N = 167$). See Figure 1. In accordance with LeBel et al. (2019), this effect was detected and consistent with that of the previous work ($t(403) = 4.26$, $p < 0.01$, $d = 0.42$).

In line with the original analysis pathway, a 2 (high/low hierarchy) \times 2 (social/remote) ANOVA was conducted where a significant main effect for hierarchy ($F(1, 317) = 27.99$, $p < .01$, $\eta^2 = 0.08$), non-significant effect of sociability ($F(1, 317) = 2.95$, $p = .08$, $\eta^2 = 0.01$), and no interaction effect ($F(1, 317) = 1.21$, $p = .27$, $\eta^2 < 0.01$) was found. These results replicated those of the original study.

Study 6

Assumptions

The three corruption perception items had a high level of reliability ($\alpha = 0.81$; $\omega = 0.83$). First evaluating the manipulation check item,

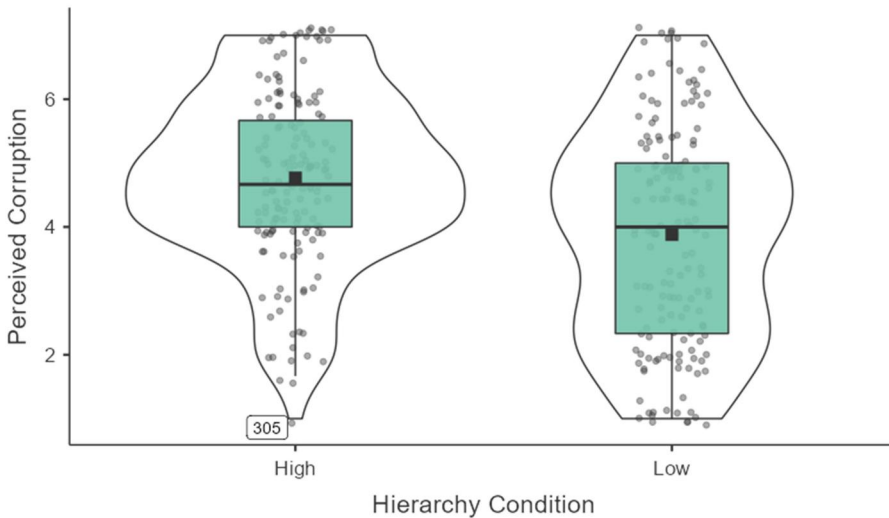


Figure 1. Violin plot illustrating the difference in corruption perceptions between hierarchy conditions in study 1c.

Table 1. Correlation matrix by hierarchy condition.

Variable	High hierarchy ($N = 168$)						Low hierarchy ($N = 153$)					
	M	SD	1	2	3	4	M	SD	1	2	3	4
1. HI	4.76	1.69					3.80	1.52				
2. CO	4.68	1.26	0.41*				4.24	1.23	0.33*			
3. IC	4.82	1.19	0.21*	0.24*			4.88	1.15	0.10	0.01		
4. P1	1.14	0.34	-0.09	-0.028	-0.07		1.27	0.44	-0.26*	-0.31*	0.02	
5. P2	1.60	0.49	-0.08	-0.27*	-0.06	0.29*	1.64	0.48	-0.14	-0.09	-0.04	0.33*

Note. HI: hierarchy manipulation check; CO: corruption perceptions total; IC: intelligence and capability control composite; P1 = belief that audit is justified (1 = yes, 2 = no); P2 = desire to sign petition (1 = yes, 2 = no).

participants allocated to the high hierarchy condition perceived it as more hierarchical ($M = 4.68$, $SD = 1.26$, $N = 168$) than participants in the low hierarchical condition ($M = 4.24$, $SD = 1.23$, $N = 153$), with a significant and medium-size difference, $t(319) = 3.18$, $p = .002$, $d = 0.36$ (CI [0.13, 0.58]). See Table 1 for the correlation matrices and Table 2 for trust-related behavior frequencies.

Hypothesis 1

Addressing Hypothesis 1, a statistically significant difference ($t(319) = 3.18$, $p < .01$, $d = 0.36$, 95% CI [0.13, 0.58]) in perceptions of corruption was found between the high hierarchy ($M = 4.68$, $SD = 1.26$) and low hierarchy condition ($M = 4.24$, $SD = 1.23$). See Figure 2. In accordance with LeBel et al. (2019), this effect was detected and considered to be consistent with the original effect size reported. Ratings of the control items on intelligence ($t(319) = 0.30$, $p = .76$, $d = -0.03$, 95% CI [-0.25, 0.19]), capability

Table 2. Frequencies of trust-related behavior outcomes by hierarchy condition.

	High hierarchy (N = 168)		Low hierarchy (N = 153)	
	Yes	No	Yes	No
Petition 1	145	23	112	41
Petition 2	68	100	55	98

Note. Petition 1 = belief that audit is justified, Petition 2 = desire to sign petition

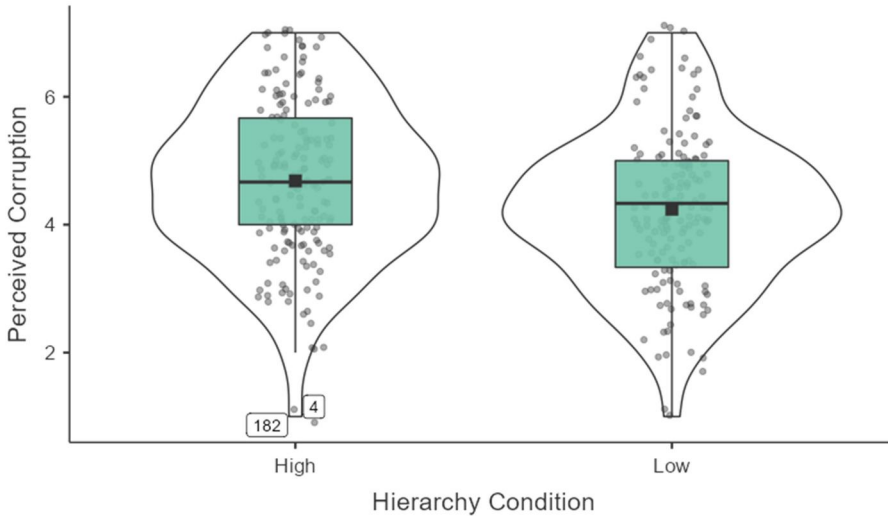


Figure 2. Violin plot illustrating the difference in corruption perceptions between hierarchy conditions in study 6.

($t(319) = -0.52$, $p = .60$, $d = -0.06$, 95% CI $[-0.28, -0.16]$), or the averaged combination of the two ($t(319) = -0.44$, $p = .66$, $d = -0.05$, 95% CI $[-0.27, 0.17]$) did not differ between hierarchy conditions.

Hypothesis 2

To replicate the theoretical grounding, foci and modeling of the original study, perceived corruption was situated as a mediator between hierarchy and the trust-related behaviors. Mediation analyses reported a significant relationship between hierarchy and perceived corruption ($B = 0.44$, $p = .002$), and between perceived corruption and belief that an audit is justified ($B = -0.09$, $p < .01$), with a significant indirect effect ($B = -0.04$, $SE = 0.02$, 95% CI $[-0.07, -0.01]$). The direct effect of hierarchy upon audit beliefs was also significant ($B = -0.09$, $SE = 0.04$, 95% CI $[-0.17, -0.01]$). A second mediation analysis reported a significant relationship between perceived corruption and willingness to sign the petition ($B = -0.07$, $p < .01$) with a significant indirect effect ($B = -0.03$, $SE = 0.05$, 95% CI $[-0.06, -0.01]$) but not direct effect ($B = -0.01$, $SE = 0.05$, 95% CI $[-0.12, 0.09]$).

Providing evidence for the unique role of perceived corruption, similar analyses exploring the control items (intelligence and capability individually and both averaged together) as mediator reported no statistically significant indirect mediation effects. Unlike the original study which found direct effects of hierarchy on both petition questions, the current data reported a direct effect of the hierarchy group upon the belief that the audit was justified but not willingness to sign the petition.

Discussion

Core results & hypotheses

Primarily, the current study provides support for the hypothesis that more hierarchical organizational structures are associated with greater perceived corruption, with results highly congruent with that of Fath and Kay (2018). Furthermore, mediation analyses supported the claim that hierarchical organizations are associated with lower trust-related behavior, and that this is partially due to the perceived corruption associated with these taller structures. Diverging from the majority of studies on organizational hierarchy which have focused on the impact upon the employees and their interpersonal dynamics or performance (e.g., Halevy, Chou, & Galinsky, 2011; Hays et al., 2022; Yang & Zhang, 2019), our research provides additional evidence for the claim that hierarchical composition is likely to have broader consequences than just the within-organization effects typically studied.

To explore a plausible alternative interpretation of these results, the current study captured two control variables to investigate whether highly hierarchical organizations may elicit a generally negative perception from individuals, known as the (negative) halo effect (Rosenzweig, 2007). These variables assessed participants' judgements about the employees' intelligence and capability. We found no evidence for this negative halo interpretation; participants' perceptions of employee intelligence and capability did not differ between the two hierarchy conditions, and these variables did not partially mediate the relationship between hierarchy and trust-related behavior as perceived corruption did. Thus, this finding adds to the evidence suggesting the unique role that hierarchy specifically has for influencing corruption perceptions.

Limitations

In providing patterns of results and effect size estimates similar to that of Fath and Kay (2018), the current study has contributed to a clearer consensus on the effects of hierarchy on perceived corruption. However, the

current study was based on an intra-organizational competition effect that was not formally measured or tested. Further research should consider adopting a clearer theoretical evaluation of the various mechanisms of competition and power proposed. Specifically, measuring perceptions of approach and inhibition related tendencies, and competitive and opportunistic behaviors, may provide further evidence for the hypothesized effect for Keltner et al. (2003) approach/inhibition theory of power. Alternative explanations could also be incorporated into study design e.g., manipulating the stability or consistency of ranking (Anderson & Brown, 2010), which might be assumed to be greater in a hierarchical organization where there are more levels to navigate.

In the original study, two questions on the perceived need for an ethics audit, and willingness to sign a petition, were conceptualized as representative of trust-related behavior. However, only the latter outcome could be argued to represent behavior, and trust was not measured explicitly. Furthermore, the direct relationship reported between hierarchy and the first trust-related outcome—beliefs in the need for an audit, but not second - desire to sign the petition, suggests that organizational hierarchy may impact trust-related attitudes/cognition, but have a much weaker impact upon behavior. This vital difference between thoughts and actions represents a convincing basis for further study to capture different dimensions of trust and trust-related behavior. To further practice, more rigorous measurement strategies, such as use of a theory-informed measure of trust (McEvily & Tortoriello, 2011) and subsequent desistance in use of ad-hoc measures (Flake & Fried, 2020), provides a promising basis for increasing the rigor of the research and validity of the study conclusions.

The current study implies that individuals tend to perceive organizations with a high degree of hierarchical structure as more likely to be corrupt, however, it is important to note that the study utilized only a hypothetical scenario and a fictitious company (GBL), with little other contextual information provided except for organizational structure. As a result, it is unlikely this size of effect can be generalized to real world-settings where other factors, such as personal experiences or perceptions of corporate social responsibility (e.g., Keig, Brouters, & Marshall, 2015) could play a role in shaping individual's views on corruption in actual organizations. Conducting further research in real-world settings could be valuable to elucidate this phenomenon, and map factors beyond the organizational structure that might directly or indirectly contribute to beliefs about corruption.

Sample demographics represent a further threat to the external validity of the observed effects. As expected from predominately recruiting participants from a psychology student population (APA., 2011), females represented more than two-thirds of our sample compared with 41.8 and 50.5%

of the original samples. Similarly, our sample was meaningfully younger ($M = 25.45$ compared to $M = 34.94$ and 41.62 , respectively) and based in a different country. Whilst it is reassuring that despite known effects (e.g., sex differences in intentions and conduct of unethical workplace behavior; Evans, 2022), results were congruent between samples, these results should not be generalized too far or considered universal. Greater consideration of sample demographics and cultures is likely to require larger and more diverse research teams and thus we commend groups like the Psychological Science Accelerator (PSA: Moshontz et al., 2018) who collect datasets more suitable for exploring these bigger questions.

Implications and directions

The current study suggests individuals may develop a reduced level of trust in hierarchical organizations and their employees, based on the belief that they are more likely to be involved in corrupt practices. These shifts in trust-related outcomes could have wide implications for organizations, such as reduced attractiveness to potential employees and customers. For instance, if an individual perceives highly hierarchical organizations as having a high level of competition or corruption, they may be less likely to want to work for these companies or to purchase products and services from them. Given the growing awareness, prioritization and problematizing of corruption, studying the consequences of trust-related behavior represents a valuable avenue for future research, particularly as previous studies have already suggested that individuals prefer to work for ethical companies with perceived good corporate social responsibility (Kim & Park, 2011).

In attempting to apply the findings of the current study to encourage less hierarchical structures however, readers should be reminded that there are many reasons for choosing one organizational structure over another. Changes in structure should be considered in context of the wider body of evidence outlining the strengths and limitations of each type of organizational structure (e.g., Matusik et al., 2022) and the impact of the change process itself (Evans, 2020). Of particular importance, the current study reports outcomes for *perceived* corruption, but not corruption itself. This latter relationship is tentatively supported through works exploring competition and corruption (e.g., Schwieren & Weichselbaumer, 2010) but would be particularly impactful when studied in context of varying and realistic degrees of evidence of corruption. Future works studying corruption directly are especially encouraged to empirically evidence the extent to which hierarchies provide more opportunities for corruption, and/or if individuals who have opportunistic or competitive tendencies become more interest in,

and self-select into, more hierarchical systems. Such questions provide the basis for high-impact recommendations and subsequent progress toward the reduction in corruption and bribery, as prioritized by the Sustainable Development Goals (target 16.5; United Nations, 2015).

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References

- Aguilera, R. V., & Vadera, A. K. (2008). The dark side of authority: Antecedents, mechanisms, and outcomes of organizational corruption. *Journal of Business Ethics*, 77(4), 431–449. doi:10.1007/s10551-007-9358-8
- Al-Saggaf, Y., Burmeister, O., & Weckert, J. (2015). Reasons behind unethical behaviour in the Australian ICT workplace: An empirical investigation. *Journal of Information, Communication and Ethics in Society*, 13(3/4), 235–255. doi:10.1108/JICES-12-2014-0060
- Anderson, C., & Berdahl, J. L. (2002). The experience of power: Examining the effects of power on approach and inhibition tendencies. *Journal of Personality and Social Psychology*, 83(6), 1362–1377. doi:10.1037/0022-3514.83.6.1362
- Anderson, C., & Brown, C. E. (2010). The functions and dysfunctions of hierarchy. *Research in Organizational Behavior*, 30, 55–89. doi:10.1016/j.riob.2010.08.002
- APA. (2011). *Men: A growing minority? Women earning doctoral degrees in psychology outnumber men three to one. What does this mean for the future of the field?* Retrieved from <http://www.apa.org/gradpsych/2011/01/cover-men.aspx>.
- Bac, M. (1996). Corruption, Supervision, and the Structure of Hierarchies. *Journal of Law, Economics, and Organization*, 12(2), 277–298. doi:10.1093/oxfordjournals.jleo.a023364
- Belousova, V., Goel, R. K., & Korhonen, I. (2016). Corruption perceptions versus corruption incidence: Competition for rents across Russian regions. *Journal of Economics and Finance*, 40(1), 172–187. doi:10.1007/s12197-014-9298-y
- Champely, S. (2020). *PWR: Basic functions for power analysis*. R package version 1.3-0. <https://CRAN.R-project.org/package=pwr>.
- Charness, G., Masclet, D., & Villeval, M. (2014). The dark side of competition for status. *Management Science*, 60(1), 38–55. doi:10.1287/mnsc.2013.1747
- Charron, N. (2016). Do corruption measures have a perception problem? Assessing the relationship between experiences and perceptions of corruption among citizens and experts. *European Political Science Review*, 8(1), 147–171. doi:10.1017/S1755773914000447
- Cho, M., & Keltner, D. (2020). Power, approach, and inhibition: Empirical advances of a theory. *Current Opinion in Psychology*, 33, 196–200. doi:10.1016/j.copsyc.2019.08.013
- Condon, D. M., & Revelle, W. (2014). The international cognitive ability resource: Development and initial validation of a public-domain measure. *Intelligence*, 43, 52–64. doi:10.1016/j.intell.2014.01.004

- Evans, T. R. (2020). Improving evidence quality for organisational change management through open science. *Journal of Organizational Change Management*, 33(2), 367–378. doi:10.1108/JOCM-05-2019-0127
- Evans, T. R. (2022). Unethical behaviour in the workplace: A direct and conceptual replication of Jones & Kavanagh (1996). *Comprehensive Results in Social Psychology*. doi:10.31234/osf.io/a2rj9
- Fath, S., & Kay, A. C. (2018). “If hierarchical, then corrupt”: Exploring people’s tendency to associate hierarchy with corruption in organizations. *Organizational Behavior and Human Decision Processes*, 149, 145–164. doi:10.1016/j.obhdp.2018.10.004
- Fath, S. B., & Kay, A. (2017). Exploring the effect of perceived normalcy on the endorsement of hierarchy. *Academy of Management Proceedings*, 2017(1), 13912. doi:10.5465/AMBPP.2017.13912abstract
- Fath, S., Proudfoot, D., & Kay, A. C. (2017). Effective to a fault: Organizational structure predicts attitudes toward minority organization. *Journal of Experimental Social Psychology*, 73, 290–297. doi:10.1016/j.jesp.2017.10.003
- Flake, J. K., & Fried, E. I. (2020). Measurement schmeasurement: Questionable measurement practices and how to avoid them. *Advances in Methods and Practices in Psychological Science*, 3(4), 456–465. doi:10.1177/2515245920952393
- Friesen, J. P., Kay, A. C., Eibach, R. P., & Galinsky, A. D. (2014). Seeking structure in social organization: Compensatory control and the psychological advantages of hierarchy. *Journal of Personality and Social Psychology*, 106(4), 590–609. doi:10.1037/a0035620
- Golden, M. A., & Chang, E. C. (2001). Competitive corruption: Factional conflict and political malfeasance in postwar Italian Christian Democracy. *World Politics*, 53(4), 588–622. doi:10.1353/wp.2001.0015
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. Jr, (2003). A very brief measure of the big-five personality domains. *Journal of Research in Personality*, 37(6), 504–528. doi:10.1016/S0092-6566(03)00046-1
- Gutmann, J., Padovano, F., & Voigt, S. (2020). Perception vs. experience: Explaining differences in corruption measures using microdata. *European Journal of Political Economy*, 65, 101925. doi:10.1016/j.ejpoleco.2020.101925
- Halevy, N., Y. Chou, E., & D. Galinsky, A. (2011). A functional model of hierarchy: Why, how, and when vertical differentiation enhances group performance. *Organizational Psychology Review*, 1(1), 32–52. doi:10.1177/2041386610380991
- Hays, N. A., & Bendersky, C. (2015). Not all inequality is created equal: Effects of status versus power hierarchies on competition for upward mobility. *Journal of Personality and Social Psychology*, 108(6), 867–882. doi:10.1037/pspi0000017
- Hays, N. A., Li, H. Yang, X., Oh, J. K., Yu, A., Chen, Y.-R., ... Jamieson, B. B. (2022). A tale of two hierarchies: Interactive effects of power differentiation and status differentiation on team performance. *Organization Science*, 33(6), 2085–2105. doi:10.1287/orsc.2021.1540
- Jamovi project. (2022). *Jamovi* (version 2.3) [Computer Software]. Retrieved from <https://www.jamovi.org>.
- Julián, M., & Bonavia, T. (2020). Psychological variables related to corruption: A systematic review. *Anales de Psicología* [Annals of Psychology], 36(2), 330–339.
- Kang, J., & Hustvedt, G. (2014). Building trust between consumers and corporations: The role of consumer perceptions of transparency and social responsibility. *Journal of Business Ethics*, 125(2), 253–265. doi:10.1007/s10551-013-1916-7
- Kazak, A. E. (2018). Editorial: Journal article reporting standards. *The American Psychologist*, 73(1), 1–2. doi:10.1037/amp0000263

- Keig, D. L., Brouthers, L. E., & Marshall, V. B. (2015). Formal and informal corruption environments and multinational enterprise social irresponsibility. *Journal of Management Studies*, 52(1), 89–116. doi:10.1111/joms.12102
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review*, 110(2), 265–284. doi:10.1037/0033-295x.110.2.265
- Kilduff, G. J., Galinsky, A. D., Gallo, E., & Reade, J. J. (2016). Whatever it takes to win: Rivalry increases unethical behavior. *Academy of Management Journal*, 59(5), 1508–1534. doi:10.5465/amj.2014.0545
- Kim, S. Y., & Park, H. (2011). Corporate social responsibility as an organizational attractiveness for prospective public relations practitioners. *Journal of Business Ethics*, 103(4), 639–653. doi:10.1007/s10551-011-0886-x
- Kulik, B. W., O’Fallon, M. J., & Salimath, M. S. (2008). Do competitive environments lead to the rise and spread of unethical behavior? Parallels from Enron. *Journal of Business Ethics*, 83(4), 703–723. doi:10.1007/s10551-007-9659-y
- LeBel, E. P., Vanpaemel, W., Cheung, I., & Campbell, L. (2019). A brief guide to evaluate replications. *Meta-Psychology*, 3, 1–9. doi:10.15626/MP.2018.843
- Magee, J. C., & Galinsky, A. D. (2008). *The self-reinforcing nature of social hierarchy: Origins and consequences of power and status*. IACM 21st Annual Conference Paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1298493.
- Matusik, J. G., Mitchell, R. L., Hays, N. A., Fath, S., & Hollenbeck, J. R. (2022). The highs and lows of hierarchy in multiteam systems. *Academy of Management Journal*, 65(5), 1571–1592. doi:10.5465/amj.2020.0369
- McEvily, B., & Tortoriello, M. (2011). Measuring trust in organisational research: Review and recommendations. *Journal of Trust Research*, 1(1), 23–63. doi:10.1080/21515581.2011.552424
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 437–455. doi:10.1037/a0028085
- Mocan, N. (2008). What determines corruption? International evidence from microdata. *Economic Inquiry*, 46(4), 493–510. doi:10.1111/j.1465-7295.2007.00107.x
- Moshontz, H., Campbell, L., Ebersole, C. R., IJzerman, H., Urry, H. L., Forscher, P. S., ... Chartier, C. R. (2018). The psychological science accelerator: Advancing psychology through a distributed collaborative network. *Advances in Methods and Practices in Psychological Science*, 1(4), 501–515. doi:10.1177/2515245918797607
- Pierce, J. R., Kilduff, G. J., Galinsky, A. D., & Sivanathan, N. (2013). From glue to gasoline: How competition turns perspective takers unethical. *Psychological Science*, 24(10), 1986–1994. doi:10.1177/0956797613482144
- Pownall, M., Azevedo, F., König, L. M., Slack, H. R., Evans, T., Flack, Z., ... Baker, B. J., FORRT. (2022). Teaching open and reproducible scholarship: A critical review of the evidence base for current pedagogical methods and their outcomes. *Royal Society Open Science*, 10(5), 221255. doi:10.1098/rsos.221255
- R Core Team. (2022). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from <https://www.R-project.org/>.
- Rosenzweig, P. (2007). Misunderstanding the nature of company performance: The halo effect and other business delusions. *California Management Review*, 49(4), 6–20. doi:10.2307/41166403
- RStudio Team. (2020). *RStudio: Integrated development for R*. RStudio, PBC, Boston, MA. Retrieved from <http://www.rstudio.com/>.

- Schurr, A., & Ritov, I. (2016). Winning a competition predicts dishonest behavior. *Proceedings of the National Academy of Sciences of the United States of America*, 113(7), 1754–1759. doi:10.1073/pnas.1515102113
- Schwieren, C., & Weichselbaumer, D. (2010). Does competition enhance performance or cheating? A laboratory experiment. *Journal of Economic Psychology*, 31(3), 241–253. doi:10.1016/j.joep.2009.02.005
- Sharafutdinova, G. (2010). What explains corruption perceptions? The dark side of political competition in Russia's regions. *Comparative Politics*, 42(2), 147–166. doi:10.5129/001041510X12911363509431
- Singh, J. J., Iglesias, O., & Batista-Foguet, J. M. (2012). Does having an ethical brand matter? The influence of consumer perceived ethicality on trust, affect and loyalty. *Journal of Business Ethics*, 111(4), 541–549. doi:10.1007/s10551-012-1216-7
- Swab, R. G., & Johnson, P. D. (2019). Steel sharpens steel: A review of multilevel competition and competitiveness in organizations. *Journal of Organizational Behavior*, 40(2), 147–165. doi:10.1002/job.2340
- Transparency International. (2022). *Corruption perceptions index*. Retrieved from <https://www.transparency.org/en/cpi/2022/index/gbr>.
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. Retrieved from <https://sdgs.un.org/2030agenda> (Accessed February 23, 2023).
- United Nations Statistics Division. (2022). *SDG indicators*. United Nations. Retrieved from: <https://unstats.un.org/sdgs/report/2022/Goal-16/>.
- Warren, E. M. (2004). What does corruption mean in a democracy? *American Journal of Political Science*, 48(2), 328–343. doi:10.2307/1519886
- Wright, L., Burton, A., McKinlay, A., Steptoe, A., & Fancourt, D. (2022). Public opinion about the UK government during COVID-19 and implications for public health: A topic modeling analysis of open-ended survey response data. *PLOS One*, 17(4), e0264134. doi:10.1371/journal.pone.0264134
- Xu, F., Wu, L., & Evans, J. (2022). Flat teams drive scientific innovation. *Proceedings of the National Academy of Sciences of the United States of America*, 119(23), e2200927119. doi:10.1073/pnas.2200927119
- Yang, H., & Zhang, L. (2019). Communication and the optimality of hierarchy in organizations. *The Journal of Law, Economics, and Organization*, 35(1), 154–191. doi:10.1093/jleo/ewy025

Appendix A. Contributorship

Table A1. The current project adopted the CRediT taxonomy by which we acknowledge the contributions of all individuals who worked on the current project.

Term	Contributors
Conceptualization	Project development: all authors
Methodology	Study design: all authors
Software	R & Jamovi: TRE
Validation	Quality control: TRE
Formal analysis	Analyses: TRE
Investigation	Data collection: RK, SOR, SAA, NT, FONC, TW, MMK
Resources	Qualtrics: TRE
Data curation	Data processing: TRE
Writing – original draft	Involved in writing: all authors
Writing – review & editing	Involved in editing: all authors
Visualization	Creating visualizations: TRE
Supervision	Supervision: TRE
Project administration	Project admin: TRE
Funding acquisition	N/A