

PERSONALITY TRAIT DISTRIBUTION OF CONSTRUCTION MANAGERS IN THE REPUBLIC OF IRELAND: THEORETICAL RELEVANCE TO CONFLICT MANAGEMENT

Tadhg O'Neill¹ and John P Spillane

Irish Construction Management Research Centre, School of Engineering, University of Limerick, Limerick, Ireland

The study of personality has long been at the centre of much organisational management research. Understanding the personological composition of its workforce allows organisations to provide tailored resources, training and management leading to better outcomes. The relationship between personality traits and a variety of organisational phenomena has been explored, such as the relationship between personality and conflict management. Despite the acknowledgement of such relationships, analysis of the distribution and commonality of personality traits at the managerial level in the Republic of Ireland (ROI) built environment is absent. 62 construction professionals currently working in the Irish construction sector carry out the Big Five Inventory. Results are scored in five categories, Extraversion, Neuroticism, Openness, Conscientiousness and Agreeableness. Conscientiousness is the most dominant trait with 30 participants scoring highest in this category. Agreeableness is second with 17. The prominence of these traits is suggestive of an integrating and compromising approach to conflict management amongst Construction managers (CM) in the ROI. These findings are used to create informed discussion on the distribution of personality traits among CMs in the ROI.

Keywords: big five inventory, conflict, dispute, personality traits

INTRODUCTION

Modern organisations are complex, ever-changing, multifaceted entities. The challenges one faces when operating in a modern construction firm are immeasurable, making conflict a defining characteristic of the sector. The ICC, (2024), report found the aggregate value of construction disputes in 2022 to be a staggering \$113b, condemning figures for the sector. Despite its size, the Republic of Ireland does not differ from this trend. The sheer volume of moving parts in large-scale construction is astounding, with a variety of stakeholders, whose interests rarely align in full, exacerbating the already litigious sector. O'Connor, *et al.* (2023), note the conflict-prone sector is often driven by its highly competitive, male-dominated, pressurised environment, resulting in both on and off-site tensions. The prevalence of conflict in the ROI construction sector cannot be overstated. A study carried out on Irish apprentices highlighted that 64% had experienced conflict at work, with 1 in 5 citing it as a primary reason for questioning their future in the sector (O'Neill, *et al.*, 2023).

¹ Tadhg.oneill@ul.ie

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The presence of high levels of conflict in the built environment is irrefutable. Meng, (2012), suggests that the sources of these conflicts will vary from project to project.

External causes such as 'project complexity, contractual issues and economic fragility' garner much attention when discussion ensues; however, it is vital to equally examine human factors that may influence our workforce's approach to conflict. Personality traits play a pivotal role in one's perception and approach to interpersonal interactions. The Big Five personality model is utilised in built environment studies, including those investigating their link with conflict management styles Verwey, *et al.* (2023) and team composition Danja, *et al.* (2021). However, the prominence of each trait within the construction management workforce in the ROI remains unknown. The reliability and simplicity of the Big Five personality trait framework; Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, make it the perfect medium in which this study examines the personality of construction managers in the ROI. The distribution of these traits and investigation into their potential links to conflict follow. This research aims to directly address the distribution of personality traits among management within the sector. Firstly, the literature review features an exploration of the literature on both construction conflict and personality. The comprehension of the frequency of personality traits and their conflict tendencies may ultimately better inform organisational conflict management policy in the built environment. This aligns with Gao, *et al.* (2020), who suggest managers should take personality traits into account during task allocation.

LITERATURE REVIEW

Conflict and construction have long been synonymous, with the industry possessing a uniquely effective ability to create disputes, unparalleled to other sectors. While investigation into varied external conflict causation factors such as economic instability, home/life issues and project complexity are present (Brockman, 2014), researchers have begun to increasingly focus on the role of individuals, more specifically personality traits, in the shaping of conflict in an organisational setting (Ayub, *et al.*, 2017). The Big Five personality framework comprising of O.C.E.A.N. is widely implemented when investigating how personological factors influence workplace interactions and conflict (Soomro, *et al.*, 2023). A progressing body of knowledge is revealing the influence of personality traits on conflict in an organisational context. Given the highly competitive and adversarial environment in which the construction sector operates, comprehension of the personological composition of its workforce is essential for efficient and effective conflict management strategies (Khalid, 2015). This review analyses current literature on personality traits and their relationships with conflict, allowing for informed discussion on the influence of each trait once the distribution of the workforce is realised.

Extraversion is defined by one's tendency to be assertive and social, to feel good and to look for excitement (Costa and McCrae, 1992). Those scoring highly in extraversion tend to gain energy from social situations and are highly functioning in social environments. Positive emotionality and reward sensitivity are common amongst this trait type, with a higher level of positive emotions and increased motivation by positive outcomes and opportunities (Watson and Clark, 1997; Lucas, *et al.*, 2000). In an organisational context, extroverts typically thrive in leadership roles and tend to have better career outcomes with Green, *et al.* (2016), finding extraverted CFO's and CEO's earning 6-11% higher salaries. However, this

predisposition to proactive communication results in a higher likelihood of engaging in conflict. Broadly speaking, extroverts tend to address conflicts directly rather than avoiding them. Tashchian, *et al.* (2014), found extraversion to be a strong predictor of dominant, compromising and integrative conflict management approaches. Wood and Bell, (2008) compound this, finding extroverts to be more likely to impose their views to push preferred outcomes (dominating conflict approach). While high extraversion scores can be an indicator of the likelihood of addressing conflict directly, the escalation of those conflicts typically relies on the presence of other traits such as agreeableness (Ann and Yang, 2012). If there is a concurrent absence of agreeableness, the conflict is more likely to escalate. Similarly, an extravert's ability to discuss underlying tension, paired with the presence of agreeableness, can result in a compromising approach.

Costa and McCrae, (1992) characterise openness to experience as one's willingness to engage in new/novel ideas and perspectives. The desire for variety and novel experiences, which may drive an openness to interpersonal diversity, has garnered much academic interest. The manifestation of openness in an organisational context can be beneficial, having a positive relationship with creativity and adaptability (Abu Raya, *et al.*, 2023). This is not a recent discovery, with early works such as Barrick and Mount, (1991), finding open employees to be more receptive to training and consequently, seeing more gain. Broadly speaking, those who are more open-minded are more tolerant to other values, beliefs and ideas which may reduce bias and facilitate understanding (Abu Raya, *et al.*, 2023). Collaborative conflict resolution strategies have been shown to be positively related to openness, while being negatively related to avoidant approaches (Tehrani and Yamini, 2020). The predisposition to a willingness to engage and accept new ideas allows persons to create unique solutions to problems and leads to better outcomes in diverse environments. Although individuals scoring high in openness are typically better equipped to handle conflict, they may see increased conflict frequency in certain environments. Causation is found in Moss, *et al.* (2007), which concludes that individuals tend to be more committed to organisations that 'facilitate the expression of their traits'. Consequently, open individuals in traditionally structured work environments such as construction, may question policies and procedures.

Conscientiousness is the propensity to be organised, persistent, and goal orientated, as well as exercising restraint and self-discipline (Costa and McCrae, 1992), defining characteristics being dependability, orderliness and achievement orientation (Rothmann and Coetzer, 2003). In an organisational setting, conscientiousness is one of the best predictors of job performance. This holds across sectors, ranging from sales representatives to police officers (Rothmann and Coetzer, 2003). Interestingly, conscientiousness is a weaker predictor of managerial performance, where openness and neuroticism tend to play a more significant role. In built environment studies such as Gao, *et al.* (2020), conscientiousness is seen to have a strong correlation with safety behaviours, aligning with the organisation and self-discipline required to follow protocols coherently. The ability to follow procedures can reduce task error, reducing conflict forming because of perceived work volume. A study related to traits and negotiation outcomes found conscientiousness to be linked to the facilitation of better outcomes (Abdullah and Baki, 2016), further highlighting the ability of those high in conscientiousness to keep the discussion focused and organised. Conscientiousness is also heavily linked to the effectiveness of conflict management, accounting for 10% of the variance, as seen in Barbuto, *et al.* (2010). Integrating and compromising

conflict management approaches are positively related to conscientiousness, while Tehrani and Yamini, (2020) study show mixed results in the relationship to avoiding, dominating and obliging styles. Ling, *et al.* (2020) provide an interesting insight into how a construction project manager's agreeableness and conscientiousness may improve over time.

The propensity to be benevolent, obedient, modest, and trusting is referred to as agreeableness (Costa and McCrae, 1992). Persons exhibiting high agreeableness are typically good-natured, modest and trusting (Abdullah and Baki, 2016). In an organisational context, agreeable employees often exhibit pro-social behaviour and are seen as supportive by colleagues. Ling, *et al.* (2020) found agreeableness to be positively related to a concern for people, not production, with agreeable project managers sometimes struggling to be decisive. The same works noted the ability of agreeable PMs to foster teamwork and care for employee wellbeing. In relation to conflict, the agreeableness trait is associated with a preference for an integrating, compromising and obliging conflict management style (Ejaz, *et al.*, 2012). This may be a result of the prioritisation of positive outcomes over personal relationships. Occasionally, at the expense of their interests, agreeable individuals will still show a strong preference towards the obliging conflict management style (Priyadarshini, 2017). This association with a need for harmony is not new with early works such as Jones and White, (1985), discussing agreeable individuals as being more likely to avoid confrontation, typically in search of a more diplomatic solution. Conversely, dominating conflict management styles, where one is typically seen as valuing control over collaboration, are negatively related to agreeableness. Meaning those showing lower agreeableness scores are more likely to employ this dominating style in their pursuit of resolution (Jones and White, 1985). High levels of agreeableness have been noted across several studies as being critical for creating collaborative and cooperative workplace interactions (Jones and White, 1985; Ejaz, *et al.*, 2012; Priyadarshini, 2017). Seminal works such as Costa and McCrae, (1992), suggest it to be the most dominant personological factor in shaping interpersonal dynamics in general. More modern studies identify it as a significant predictor of conflict management approach (Abdullah and Baki, 2016). It is often most effective when explaining what neuroticism is to describe it as the inverse of emotional stability. In essence, it is the predisposition to experience unpleasant emotions like anxiety and despair (Costa and McCrae, 1992). These strong emotions often have profound implications on one's life. Highly neurotic people are often prone to moodiness, anger, anxiety, and depression (Abdullah and Baki, 2016). Costa and McCrae (1992), name impulsivity, self-consciousness and vulnerability to stress as prominent facets of neuroticism. Barrick and Mount, (1991), yielded conflicted results showing that neuroticism (or its manifestations; worrying, high-strung, emotional) tends to be a predictor of lesser job performance, generally speaking. However, the same study suggests a neurotic individual may perform better in high-performance jobs. The possibility that high-stress jobs cause one to exhibit traits associated with neuroticism is of course possible, with Barrick and Mount, (1991), suggesting causation in the interpretation of the results due to data size. Construction safety related studies show a negative relationship with neuroticism and safe behaviour, suggestive that anxious and or impulsive individuals may struggle with following protocol. In relation to conflict, anxious individuals may be likely to perceive a situation as threatening or confrontational and react or withdraw as a result. Tehrani and Yamini, (2020) shows the positive correlation between neuroticism and avoiding strategies in conflict. This could initially help individuals manage their anxiety but may result in conflict

escalation due to allowing issues to fester. If found in a situation where unavoidable, individuals may display outbursts of anger during conflict. In contrast to the other four factors during meta-analysis, neuroticism is shown to be negatively related to integrative conflict management strategy (Tehrani and Yamini, 2020). Ling, *et al.* (2020), found that construction PMs high in neuroticism struggle with work efficiency and leadership effectiveness.

This literature review provides a foundation onto which an informed discussion surrounding the influences of personological traits on conflict management strategies adopted by CMs in the ROI can take place. While the relationship between personality traits and conflict management styles is present in the literature, there remains a lack of clarity as to the commonality of these traits amongst CMs in the ROI. Given the highly competitive environment in which the construction sector operates, comprehension of personality distribution amongst managers may enhance leadership, team cohesion and reduce conflict escalation. This study addresses this gap by providing clarity to the distribution of these traits and discussing the potential implications on conflict within the sector.

METHOD

A complete and comprehensive review of appropriate literature is carried out, with this study adopting a quantitative survey-based approach to investigate the personological composition of construction managers in the ROI. A quantitative approach is essential to allow for objective measurement, analysis and replicability. The use of numerical data allows for a reduction in bias and the ability for cross-cultural comparisons (Marsella, *et al.*, 2000; Ling, *et al.*, 2020). The selection of the Big Five model is justified due to its widespread validation and application in built environment personological studies, including those investigating the relationship between personality trait and conflict management strategies (Ahmed, *et al.*, 2010). Rather than re-establish the relationship between these traits and conflict, this paper aims to analyse personality trait prevalence amongst construction CMs in the ROI, providing industry / regional-specific insights into the conflict tendencies of these traits. The study sample consists of 62 construction managers currently employed in a management capacity in the ROI. In line with Tutz, (2023), a non-probability sampling method is used for its practicality in accessing participants from a specialised workforce. The chosen personality assessment method is the Big Five Inventory-44, a comprehensive well validated questionnaire consisting of 44 Likert scale questions. The selection of the Big Five Inventory can be justified by its simplicity, ease of comprehension and wide adoption in organisationally focused research. The Likert scale is a five-point answer key with 1 = Strongly disagree, to 5 = Strongly agree. Questionnaires are administered online to limit both logistical issues and the introduction of in-person bias. Participants provide informed consent before they begin. Participants remain anonymous to ensure their comfort, in line with Harvey (2011), while simultaneously stimulating honest responses, which are critical when administering personological assessments (Vésteinsdóttir, *et al.*, 2019). Adherence to both institutional and psychological research best practice is followed where anonymity and privacy are crucial (Dienlin and Metzger, 2024). Analysis of the assessment results takes place, allowing for the determination of the distribution of personality traits amongst construction managers in the ROI. Structured discussion ensues, presenting the traits and allowing for comprehension of the implications and conflict tendencies of each personality trait. The primarily analytical approach allows for a clear visualisation of trait frequency and distribution, with structured discussion

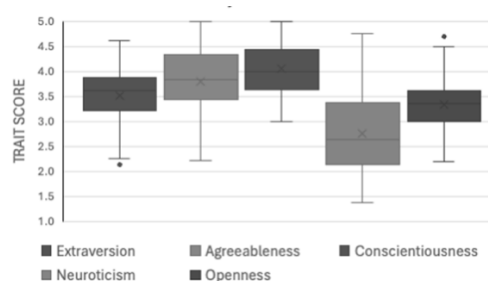
allowing for the comprehension of the implications. With literature so widely aware of the strong relationship between conflict strategy and personality traits Ejaz *et al.* (2012); Priyadarshini, (2017); Tehrani and Yamini, (2020), the analysis of distribution allows for insights into potentially industry-wide tendencies. The sample size ($n=62$) limits the generalisation of the findings; however, smaller sample sizes are still widely accepted in exploratory works (Andrade, 2020). As part of an ongoing research plan, findings provide initial insights into the personological composition of management in the built environment, while also providing a foundation for future works to build upon.

RESULTS AND ANALYSIS

Upon completion of data collection, results are formatted and analysed accordingly. Figure 1 depicts a box and whisker plot displaying a summary of the findings. A box plot is selected to represent the finding due to its multifunctionality, displaying median, mean and variability, while also showing the outliers (Nuzzo, 2016). The box itself represents the middle 50% of scores, with the whiskers extending to enclose the expected data spread. The horizontal lines show the median with the 'x' representative of the mean, allowing for comparison. Singular dots illustrate outliers.

Conscientiousness has the highest mean (m) ($m=4.05$), with a standard deviation (SD) of 0.49. The widespread outliers present in neuroticism show a high level of variability in the emotional stability of respondents. The depiction of the mean as higher than the median in neuroticism suggests that it is slightly right skewed, with several high scores dragging the mean up. Extraversion and agreeableness showed a moderate mean ($m=3.51$) and ($m=3.79$) respectively. Both traits show consistent distribution, with standard distributions of ($SD=0.55$) and ($SD=0.61$). Finally, openness has a slightly lower mean ($m=3.33$) but showed moderate constancy.

Figure 1: Personality Trait Distribution



DISCUSSION

It is important to note that although this study did not directly measure the relationship between traits and CM styles, the following discussion utilises pre-existing research highlighting the relationships between specific traits and conflict behaviours. These interpretations should be framed as part of a wider discussion on conflict in the built environment. The structure of this discussion follows from the literature review and takes place on a trait-by-trait basis. Results indicate a moderately high mean ($m=3.51$) with a narrow interquartile range, indicative of consistency of extroversion scores across participants. Outliers are few, showing limited extremes within the data, with a high of 4.63 and a low of 2.13. When looking at comparable results from a large data source such as Rentfrow, *et al.* (2015), where $n=386,375$, extroversion scores appear above average ($m=3.24$). This may be reflective of above average levels of reward sensitivity, assertiveness and sociality as shown in the works of Watson and Clark, (1997) and Lucas, *et al.* (2000). With integrating, compromising,

and dominating conflict management styles relationship with conflict established, Tashchian, *et al.* (2014), the escalation of conflict is often contingent on the presence of other traits such as agreeableness (Ann and Yang, 2012). A correlation (r) ($r=0.35$) between extroversion and agreeableness alludes to a moderate correlation between the traits. Participants may benefit from the positive social implications often associated with extroversion, while the presence of other traits may mitigate the potential downsides of its singular dominance noted in previous research. Extraversion scored as the highest trait for only 4 of the 62 participants.

Openness shows a strong relationship to positive organisational outcomes, namely creativity, adaptability and a collaborative approach to conflict resolution (Tehrani and Yamini, 2020; Abu Raya, *et al.*, 2023). Like extroversion, openness was the highest scoring trait of only 4 out of the 62 participants. Additionally, when looking to compare large data sets for contextualisation, it is found that ($m=3.33$) is lower than the ($m=3.67$) seen in Rentfrow, *et al.* (2015) study of the general population in the UK. This suggests that openness is not a defining characteristic of management in the built environment. With openness typically associated with thriving in creative and flexible environments, the low levels of openness seen in this sample may align with the rigid structure of the built environment. However, the lack of openness may hinder positive conflict resolution, with high openness linked to a collaborative approach to conflict resolution. Conscientiousness is by far the most dominant trait among participants ($n=30$), accounting for the highest scoring trait of nearly half of all respondents. This is a positive finding for Irish built environment management, with Rothmann and Coetzer, (2003), citing conscientiousness as one of the most robust predictors of job performance. The high levels of conscientiousness present in the sample may indicate a preference for integrating and compromising conflict management styles, both associated with conscientiousness in previous research (Tehrani and Yamini, 2020). Barbuto, *et al.* (2010), found that conscientiousness accounted for 10% of the variance seen in conflict management styles, suggesting that structured, resolution-based strategy associated with conscientiousness may contribute to more positive conflict outcomes. The ($m=4.05$) is significantly higher than the ($m=3.65$) seen in Rentfrow, *et al.* (2015) suggestive that the sample does possess high levels of conscientiousness. With an ($r= -0.39$), conscientiousness is moderately negatively correlated to neuroticism. This may indicate that those high in conscientiousness may be less prone to the negative traits often associated with neuroticism, such as emotional instability and stress.

Despite the reputation of the sector, agreeableness stands as the second most dominant trait, with a ($m=3.79$) and accounting for 17 participants highest scoring trait. The prominence of agreeableness is a predictor of an integrative, compromising and obliging approach to conflict management (Ejaz, *et al.*, 2012). The high levels of agreeableness present in the sample ($m=3.79$) may be indicative of a predisposition toward positive, relationship-focused conflict management, with previous research linking agreeableness to an integrative and compromising management style. There is also a moderate correlation between agreeableness and extroversion ($r=0.39$), which can produce a positive balance between assertiveness and empathy to engage in effective conflict management and avoid dominating styles. Despite the prominence of agreeableness among the participants, it is important to provide a broader context to the results. A wider study on the UK general population cited a ($m=3.79$) for agreeableness, meaning that management in the built environment may be less

agreeable overall. It is important to note the limitations of comparing personality data from different regions.

Neuroticism was the dominant trait for 7 participants in the study. With neuroticism characterised by emotional instability, anxiety and lesser workplace effectiveness, it is not something typically associated with strong or positive conflict management. The ($m=2.75$) is still a relatively moderate result, with ($m=2.97$) being indicative of the Rentfrow, *et al.* (2015), general UK population study. Interestingly, neuroticism possessed the largest standard deviation amongst participants ($SD=0.81$), showing a large variability in the emotional stability of construction managers in the ROI. There is a strong negative correlation between extraversion ($r=-0.60$) and a moderate negative correlation with conscientiousness ($r=-.39$), aligning with existing literature suggestive that those lacking emotional stability display a lower desire to socialise and self-manage. Neuroticism is the lowest scoring trait of 26 participants, which may allude to a lower propensity for avoiding conflict management styles, with previous research highlighting the relationship between neuroticism and such styles.

CONCLUSIONS

This paper aims to investigate the distribution of the Big Five personality traits amongst construction managers currently employed in the ROI. This is to allow for an understanding of the personological composition of the managerial workforce, while also allowing for informed discussion related to the potential implications on conflict seen within the sector. The most dominant trait is conscientiousness, accounting for the highest scoring factor of 30 participants with a ($m=4.05$), which aligns with a structured and integrative approach to conflict management. Agreeableness is found to be the second most dominant with a ($m=3.79$), a finding which contradicts the traditional view of managers in the built environment. The findings show conscientiousness and agreeableness together account for the highest scoring personality trait of 75% of participants. This may be indicative of a predisposition towards integrating, compromising and obliging conflict management styles, with previous research highlighting these relationships. There is a high variability seen in neuroticism, indicative of a lack of consistency in emotional regulation amongst different managers. Tailored training to increase emotional regulatory skills may better equip managers to have a unified approach to conflict management. It is important to acknowledge that although 62 participants are significant, large-scale generalisation must be avoided until a larger data set is available. This study provides theoretical insights into both the personological composition of CMs in the ROI and how dominant traits may result in a predisposition toward certain conflict management strategies, as highlighted in previous research. However, it is also important to understand that both personality and conflict are complex, multifaceted, nuanced constructs and these findings should be implemented as part of a wider conversation to acknowledge all relevant factors. This paper is part of wider research which aims to investigate the relationship between personality traits and specific conflict causation factors in the built environment.

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