

Personality and Its Effect on Group Performance: Examining the Ghana National Fire Service (Eastern Regional Office)

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ABSTRACT

The ability of operational teams to operate effectively in times of high levels of uncertainty, physical risk and time pressure is at the core of the emergency response capability of emergency response organizations. In these settings, the nature of the personality of the firefighting team and administrative team could have a major impact on group cohesion, coordination, and team performance. The purpose of this article is to discuss the link between personality traits and group performance in Ghana National Fire Service (Eastern Region office). The article uses a conceptual and empirical literature review approach to draw on the fields of personality psychology, group dynamics theory, and public sector emergency service management literature to create an integration that elucidates how individual personality dispositions combine to form a team's performance in fire and rescue operations. The article is grounded in the Five-Factor Model of personality, Input-Process-Output (IPO) Team Effectiveness Theory, and Social Identity Theory, all of which shed light on the dispositional, procedural, and identity-related processes and mechanisms through which personality composition relates to team collective performance. From the literature reviewed so far, it seems that positive outcomes of group performance are consistently linked to the personality traits of conscientiousness, emotional stability and agreeableness in high-stakes operational contexts, whereas team diversity has a double-edged effect: it can foster team decision making and role complementarities, or it can cause interpersonal conflict and coordination costs. The study highlights the following: in the specific institutional context of Ghana National Fire Service (GNFS) Eastern Regional Office, the following personality-related considerations in the recruitment, team formation and leadership practice are identified: structured personality assessment during recruitment process, deliberate consideration of team composition during the formation of fire-fighting teams and leadership that takes into account personality-based differences in response to stress and team interaction. The article ends with theoretical, practical, and policy implications for the fire service management, human resource practitioners within the emergency services, and future researchers.

1. Introduction

Fire and Rescue Services are unique amongst public sector organisations in having a challenging operational role that is often life threatening, physically demanding and of high value. Whereas in many traditional working environments where team failures are more likely to lead to monetary and reputational losses, performance failures within fire service operations can mean the difference between life and death for those who work within the service, as well as for the people who are served. Therefore, it is quite important to understand what factors influence the performance of a group in such organizations. In the organizational behaviour literature, personality has been a constant interest of scholars as one of the determinants of group performance (Barrick, Stewart, Neubert, & Mount, 1998).

Personality, defined as the relatively stable pattern of thoughts, feelings and behaviours exhibited by an individual across situations, is directly related to how an individual perceives risk, how the individual reacts to stress, how they communicate under stress and how they coordinate with their team members, and in the line of fire, all of these factors are very relevant to firefighting and rescue. Ghana National Fire Service (GNFS), the main statutory organization tasked with the prevention, suppression and rescue of fires in the country has a chain of command comprising regional offices such as Eastern Regional Office where the regional fire and rescue team coordinates fire and rescue efforts in one of the most densely inhabited and economically active regions of Ghana. Although this institution is important for its operational impact, the study of the impact of operational team personality composition on group performance outcomes has not received much scholarly interest. This article fills this gap by investigating personality traits and group performance in the Ghana National Fire Service (GNFS) as evidenced in Eastern Regional Office (ERO).

2. Statement of the Problem

Conventionally, factors like technical training, equipment adequacy, and operation procedures have been blamed for group performance in fire and rescue services. These are important factors but an overlooked one that is equally crucial is the personality makeup of the operational teams, as per some of the emerging literature on organisation behaviour, especially if the group needs to coordinate quickly, cope with stress effectively, and communicate well with each other when responding to a crisis situation (Bell, 2007). In the Ghana National Fire Service, the recruitment and team formation processes have traditionally focused on physical fitness, technical ability and disciplinary behavior with comparatively little systematic attention paid to the personality profile of personnel and its implications for team level performance in the Eastern Regional Office.

This gap is a potential vulnerability because of the possibility for lack of operational effectiveness and lack of communication and coordination issues due to personality differences in firefighting crews during emergency response operations. The problem the article aims to address, then, is a theory which is not sufficiently theorised and robustly studied and tested to show the linkages between the personality composition and group performance of the Ghana National Fire Service, Eastern Regional Office, and the institutional and operational context.

CONCEPTUAL FRAMEWORK

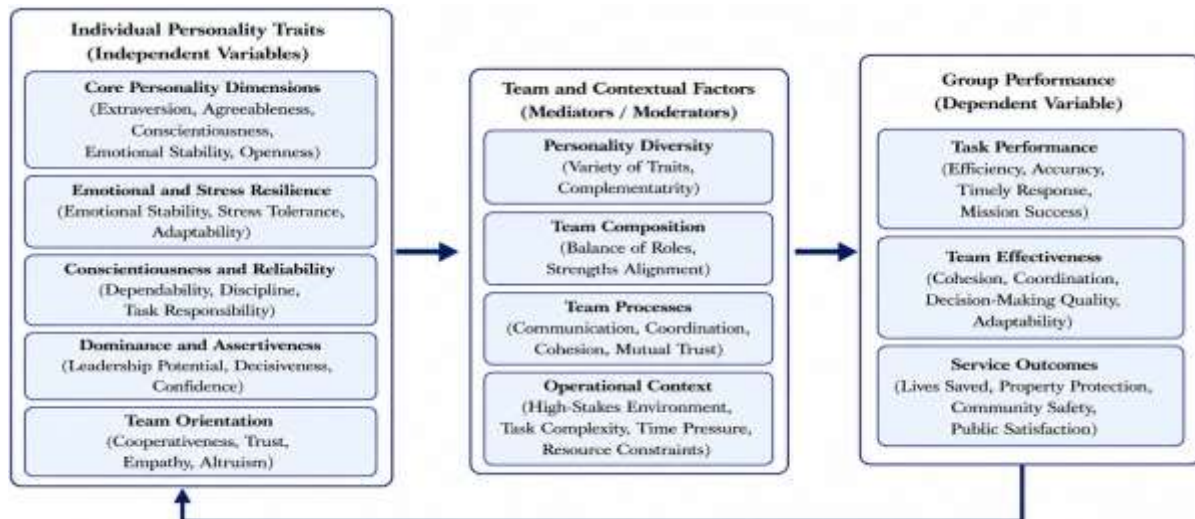


FIGURE 1: Conceptual framework on Personality and Its Effect on Group Performance on Ghana National Fire Service. **SOURCES:** Weick and Sutcliffe (2007); Regehr et al. (2003); Twumasi-Ankrah and Pels (2020).

3. Objectives of the Study

This article pursues the following objectives:

1. To examine the theoretical relationship between individual personality traits and group performance within high-stakes operational contexts.
2. To explore the specific personality dimensions most relevant to effective firefighting and rescue team performance.
3. To analyze the implications of personality diversity and composition for coordination, cohesion, and decision-making within fire service teams.
4. To evaluate the applicability of established personality and team effectiveness theories to the operational context of the Ghana National Fire Service, Eastern Regional Office.
5. To proffer practical and policy recommendations for incorporating personality considerations into recruitment, team formation, and leadership practice within fire service management.

4. Literature Review

4.1 The Concept of Personality and the Five-Factor Model

The Five-Factor Model (FFM) also known as the Big Five is widely adopted in organizational behaviour research to conceptualise and measure the personality traits (Costa & McCrae, 1992). The model reveals that there are five general personality traits, namely openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (which is the inverse of emotional stability). These dimensions have been linked to specific patterns of job-related behaviour and conscientiousness has been found to be the best individual-level predictor of job performance in all occupations (Barrick & Mount, 1991).

Occupational scenarios that involve high-risk situations, like firefighting, give particular importance to certain personality dimensions. Emotional stability, which denotes an individual's ability to perform effectively and remain stable in the face of emergency situations, is important in situations where acute stress is a common part of fire and rescue duty. Likewise, conscientiousness, which includes factors like following procedures and being orderly and dependable, is directly relevant to the disciplined implementation of safety measures critical to successful firefighting practice.

4.2 Group Performance in High-Stakes Operational Teams

The output (productivity) and effectiveness of groups, in a broad sense, how the team achieves their purpose, has been studied extensively in the organizational behaviour literature using the team effectiveness models (Cohen & Bailey, 1997). In high-stakes environments, like firefighting, military units and EM teams, group performance is also influenced by the need for rapid, non-verbal coordination, shared situational awareness, and the ability to operate effectively under acute physiological and psychological stress (Driskell, Salas, & Johnston, 1999).

Collective mindfulness, mutual monitoring, and role clarity have been identified as factors contributing to effective team performance in high-reliability organizations which operate in highly challenging, error-prone environments where mistakes can have disastrous consequences (Weick & Sutcliffe, 2007). Interpersonal and dispositional dynamics within the team are likely to play a significant role in team performance in a fire service context, in addition to individual technical competence.

4.3 Personality Composition and Team Performance

Researchers have investigated the effects of team personality composition (TPC) on group performance and results, which is the sum of several team members' personalities. Barrick et al. (1998) determined that there were team performance benefits associated with team-level aggregation of conscientiousness, agreeableness, and emotional stability as well as at the individual level. In addition to the average level of a trait, researchers have also studied the impact of personality differences (variance) among team members.

The results here are more ambiguous: while some research points to the advantages of team diversity in terms of increased creativity and decision-making due to their differences in style and perspective (Bell, 2007), others show that too much diversity within teams, particularly in areas like agreeableness and emotional stability, can lead to interpersonal conflicts and coordination problems that erode team cohesion (Barry & Stewart, 1997). The various pieces of evidence presented indicate that the correlation between personality makeup and team performance depends on the type of task and the kind of personality factor analyzed.

4.4 Personality and Performance in Fire and Emergency Service Contexts

However, research specifically focusing on personality in the context of fire and the emergency service is much more limited than the larger organisational behaviour literature, although some patterns are known. Research on firefighter selection and operational performance has supported the strong positive relationship between conscientiousness and operational performance in training and operational situations, as well as the negative relationship between excessive neuroticism and increased risk for burnout, PTSD symptomology and decreased operational effectiveness in high stress situations (Regehr, et al., 2003). Further, studies in aviation and in emergency medical services, both of which are

organized around team dynamics for crisis response in much like the fire service, have shown that teams with strong crew communication norms, high levels of trust between team members, and complementary personality types perform better in high-pressure situations (Salas, Wilson, Burke, & Wightman, 2006). The results are not from the fire service but are relevant for comparative purposes to the mechanisms that underlie the relationship between personality and team performance in similar high-stakes operational environments.

4.5 Contextual Considerations: The Ghana National Fire Service

The Ghana National Fire Service is operated under a wider context in the West African public sector with a hierarchical organisational structure, disciplined operational control structures and a high sense of duty and physical endurance (Twumasi-Ankrah & Pels, 2020). In this context, the Eastern Regional Office is able to facilitate firefighting and rescue operations in a very populated and economically important area with fire risk profiles in city, peri-urban and rural. Personality traits related to discipline, resilience, and collective orientation (conscientiousness, emotional stability, and agreeableness) might be specifically relevant factors in the performance of effective teams in the GNFS context and thus deserve special attention in the academic and practical literature.

5. Theoretical Framework

This article is based on three theoretical perspectives to show the linkage between personality and group performance in Ghana National Fire Service.

5.1 Five-Factor Model of Personality

The Five-Factor Model (Costa & McCrae, 1992) serves as the backbone for the trait taxonomy in this article and describes personality in terms of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. The model provides a parsimonious and empirically supported structure to explore how personal characteristics of individual firefighters might converge to affect team-level performance measures in the Eastern Regional Office.

5.2 Input-Process-Output (IPO) Team Effectiveness Theory

The Input-Process-Output (IPO) model of team effectiveness (McGrath, 1964; Cohen & Bailey, 1997) posits that team effectiveness is dependent on three factors: input (e.g., individual team member characteristics, personality traits); process (e.g., communication, coordination, conflict management); and output (e.g., team performance quality, satisfaction of team members). It is useful to use this framework to conceptualise personality as an input factor which influences group performance through team processes like coordination and communication, especially in the operational context of firefighting and rescue work.

5.3 Social Identity Theory

Social Identity Theory (Tajfel & Turner, 1979) suggests that people include part of their self-concept in the groups that they belong to, and that the stronger the identification with the group, the better they will cooperate, cooperate and cooperate. Interpersonal friction in relation to team performance stemming from personality diversity can be reduced through shared team goals and a shared sense of occupation by the members of the fire service team, and individual personality differences can be buffered by having a strong sense of being a firefighter.

6. Methodology

A conceptual and integrative literature review methodology has been used, where the literature consulted is theoretical and empirical works from the field of personality psychology, team effectiveness studies and the public sector emergency service management literature, with a particular contextualization of the Ghana National Fire Service and Eastern Regional Office. Thematic analysis was used to review peer-reviewed journal articles and institutional reports on personality traits, team composition, group performance and emergency service management, with specific focus on studies that considered high-stakes, high-reliability operational settings similar to firefighting and rescue operations. This methodological approach is suitable for obtaining a theoretically informed conceptual contribution in an area where primary empirical data specific to the Ghana National Fire Service's Eastern Regional Office is still limited thus paving the way for further primary empirical investigation involving the fire service personnel.

7. Discussion: Personality and Group Performance in the Eastern Regional Office

7.1 Conscientiousness and Operational Discipline

In the context of the Eastern Regional Office's operations, conscientiousness becomes a salient personality trait because the fire service operates with a strict adherence to the safety protocols, equipment maintenance procedures, and fire command directives in fire operations. High conscientiousness is likely to be associated with better reliability of standard operating procedures adherence and more disciplined operational performance with assigned roles among personnel during firefighting operations, leading to improved team performance and reduced operational risk.

7.2 Emotional Stability and Stress Response

Emotional stability or the opposite of neuroticism has a direct link to firefighters' ability to remain calm and make effective decisions in situations that are highly stressful, like structural fires, hazardous materials emergencies and search-and-rescue missions involving life threat. Teams that are comprised of emotionally stable people will be more likely to exhibit resilience to the psychological stress associated with emergency response tasks, less likely to make panicky decisions, and less likely to suffer from long-term burnout and post-traumatic stress. Psychologically stable individuals in a team will be more resilient to the psychological strain of emergency response tasks, less likely to make panicky decisions, and less likely to suffer from burnout and post-traumatic stress over time.

7.3 Agreeableness, Cohesion, and Interpersonal Coordination

Agreeableness, which includes the ability to be cooperative, trust others, and warm towards others, will tend to help with the close interpersonal coordination needed for firefighting tasks, as these tasks often involve the necessity to collaborate rapidly and with high trust with other team members, and operate in a physically dangerous environment, where line-of-sight is limited. The research results suggest that teams with a higher level of agreeableness within its members, might demonstrate higher levels of mutual support and lower levels of individual preferences to act in a way that supports effective team cohesion as they operate towards team goals.

7.4 Personality Diversity: Benefits and Challenges

Literature also indicates that although high levels of conscientiousness, emotional stability, and agreeableness are beneficial for team performance, a moderate amount of

variation in some personality traits, like extraversion and openness to experience, can be beneficial in the circumstances of the ERO's operations, in relation to decision making and adaptation. Extraverted individuals may benefit in their work with the public and in areas of crisis communications (e.g. incident command, community liaison duties); individuals with higher openness to experience may provide useful adaptable problem solving skills in unusual or complex emergency situations. But this diversity requires careful management in the form of a carefully structured allocation of roles and leadership provision in teams, to avoid the issues that arise from too much diversity in some traits.

7.5 Leadership and Personality-Aware Team Management

The discussion also highlights the importance of fire service leadership in the mediation of the relationship between personality composition and group performance. Those leaders in the Eastern Regional Office who have a familiarity with variation in stress response, communication style, role preference are better equipped to design staffing components to match staff dispositional strengths, to handle interpersonal interactions based on staff personality differences, and to offer personalized support to staff showing attributes that are more susceptible to stress-related performance degradation. This personality-based approach to leadership is a valuable, but underutilized, tool in fire service operations for improving group performance.

8. Implications for Theory and Practice

This article enriches the literature, which is largely based on western contexts from organizational and military settings, by extending the use of the Five-Factor Model, Input-Process-Output Team Effectiveness Theory and Social Identity Theory to the specific and under-researched context of fire and rescue service operations in a West African public sector setting. The findings recommend that Ghana National Fire Service should introduce a structured personality test into their recruitment and selection process, and specifically the Eastern Regional Office, to aid practice in the selection of candidates who are more conscientious and emotionally stable for jobs where both traits are required. The processes of team formation need to consider the personality composition as a basis for establishing an optimal balance of cohesion-supportive personality traits and helpful diversity in traits like extraversion and openness. Furthermore, personality-aware team management should be included into leadership development programmes to improve leaders' aptitude for distributing roles, managing interpersonal relationships, and effectively supporting employees' well-being.

9. Recommendations

Based on the foregoing analysis the recommendations are made:

1. The Ghana National Fire Service should use the validated personality assessment instruments (FAI based on Five-Factor Model) in recruitment and selection of operational firefighting officers.
2. Team composition within the Eastern Regional Office should be on the basis of personality composition, that is, a high level of conscientiousness and emotional stability in the group and some acceptable (but not excessive) variation in terms of extraversion and openness to experience.
3. Leadership development programmes should provide training aimed at understanding how to manage behaviour within teams, enabling fire service supervisors and

commanders to allocate roles within teams and how to manage personality dynamics within them, based on their profile.

4. Fire service should develop structured psychological support and stress management programmes specifically for the operational personnel with a lower emotional stability.
5. Empirical research should be conducted in the future to examine quantitatively the relationship between the composition of the fire fighting personalities and the measurable group performance outcomes, using validated personality instruments and measurable performance outcomes.

10. Conclusion

Although historically little research has been done in this dimension, personality composition is an important determinant of group performance in high-stakes emergency responses like Ghana National Fire Service. This article has been based on theoretical and empirical frameworks from personality psychology and team effectiveness and emergency service management literature to construct an integrative view of how the individual personality traits (conscientiousness, emotional stability, agreeableness) combine to influence team level performance outcomes as they relate to the operations environment of the Eastern Regional Office. The integration of personality into recruitment and leadership practice has the potential to further improve the effectiveness of fire and rescue operating units and is a good opportunity yet not widely used. While the Ghana National Fire Service is still adapting to the changing demands of responding to emergencies in a growing complex and dynamic risk landscape, the focus on the elements of personality will complement the current focus on technical training and equipment readiness.

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