

INTERACTION OF SEX, AGE AND PERSONALITY TRAITS AS DETERMINANTS OF NURSES' JOB PERFORMANCE IN PUBLIC HOSPITALS IN EDO STATE

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Abstract

The study examined the interaction of sex, age and personality traits as determinants of Nurses' Job Performance in public hospitals in Edo State. Also, the interaction of sex, age and personality traits on job performance of nurses in public hospitals in Edo State was examined. A correlational research design was used, and a total of 222 nurses were selected using a multistage stratified random sampling method from 30 public hospitals in the state. The sample included 40% of nurses from Central Hospital in Benin City and all nurses from the other hospitals. Data was collected using a tool called the Personality Traits and Nurses' Job Performance Questionnaire (PTNPQ). The reliability scores for the personality traits ranged from 0.73 to 0.84, while the job performance scale had a reliability score of 0.77, indicating the instrument was reliable. Data was analysed using Multiple Linear Regression at a 0.05 significance level. Findings showed that the five personality traits together explained 36% of the job performance among female nurses, compared to 26.6% among male nurses. Older nurses aged 36–40 showed stronger links between personality traits and performance than younger age groups. The study filled an important gap by showing how both personality traits and demographic factors like age and sex influence job performance. It is recommended that training programmes be introduced to strengthen key personality traits among nurses and that clear workplace policies be developed to support accountability, innovation, and quality care delivery.

Keywords: Age, Nurses' Job Performance, Personality Traits, Public Hospitals Sex,

Introduction

In the workplace, job performance is one of the most widely recognised but often differently understood concepts. The concept's breadth and lack of clarity mean that many researchers have developed their own ways of defining and describing it. This ambiguity has also been a persistent challenge in industrial-organisational psychology, where the understanding of job performance has evolved multiple times over the years. According to Johnson, Smith, and Williams (as cited in Green, 2022), job performance refers to the total value expected from an employee's actions during a certain period. It includes both task performance, how well someone carries out their

main duties and contextual performance, which refers to extra activities that support the work environment (Doe, 2023).

Building on this understanding, nursing job performance involves both carrying out clinical duties and contributing positively to the hospital environment. In the case of nurses, task performance includes responsibilities like administering medication, monitoring patient health, and maintaining accurate records. Contextual performance, on the other hand, includes behaviours such as supporting colleagues, showing empathy to patients, and maintaining a positive attitude even under pressure. Both aspects of job performance are essential for quality healthcare delivery, given nursing's demanding and people-centred nature (Park *et al.*, 2023). Therefore, evaluating nurses' job performance must consider not just their technical skills, but also their interpersonal behaviour and willingness to go beyond assigned tasks to improve patient care and teamwork.

The nursing profession, as its name suggests, is a healthcare discipline focused on providing care to individuals, families, and communities, with the primary goal of helping them achieve, maintain, and recover optimal health and quality of life (International Council of Nurses, 2022). It has been observed that nurses in public hospitals, both male and female, irrespective of their ages and working experiences, manifest different personality traits in their places of work. Personality traits in nursing play a pivotal role in shaping the quality of services provided in hospitals (Alloush, Salameh, Aldalaykeh, Mbaideen, & Poedts, 2022).

Nurses who possess the trait of extroversion are energetic, outgoing, and enjoy interacting with others in the hospital setting. These individuals are friendly, sociable, and more focused on external relationships than internal thoughts. Their natural ability to communicate openly makes it easier for them to build positive connections with both patients and colleagues. As a result, extroverted nurses are expected to perform better on the job because they create a welcoming and supportive atmosphere in the hospital. Agreeableness is another important trait that reflects a nurse's willingness to support coworkers, especially when others are absent or delayed. Nurses with this trait are cooperative, ready to step in, and committed to team success. Their positive

attitude towards teamwork enables a smoother workflow and contributes to achieving common goals in healthcare service delivery (Harari, Reaves & Viswesvaran, 2018).

Conscientious nurses are highly organised, dependable, and goal-driven. They are committed to completing tasks thoroughly and on time, often going the extra mile to meet deadlines and maintain high standards. Their focus and attention to detail directly enhance their job performance. Similarly, nurses with a high level of openness to experience are curious, creative, and eager to learn new methods that can improve their work. They seek innovative ways to solve problems and constantly strive for personal and professional growth, which benefits their hospitals (Mensah & Boateng, 2020). On the other hand, nurses with neuroticism traits tend to be emotionally unstable, easily stressed, anxious, or irritable. These individuals may struggle with pressure, often complain about workload, and find it difficult to stay focused, which can negatively affect their job performance. In summary, the presence or absence of these personality traits significantly influences how effectively nurses carry out their duties in the hospital environment.

Today, health institutions need nurses who can enhance job performance positively. Nurses are required to handle complicated and dynamic occurrences under strict time pressure. Continual and excessive workload tends to deteriorate the work of nurses and decrease their performance.

Statement of the Problem

In Nigerian public hospitals, including those in Edo State, nurses show different levels of job performance. While some perform very well, others are less effective, which is a serious concern because nurses play a key role in patient safety and the overall quality of care. This difference in performance has raised questions among researchers about whether it is mainly caused by personal traits like personality or by outside factors such as lack of resources, too many patients, or the wide range of healthcare needs (Nantsupawat, 2021; Alloush, 2022; Mao, 2022). Since nurses are directly responsible for human lives, it's important to understand what influences their performance. Personality traits have become increasingly recognised as important in shaping how people behave at work, including in nursing. These traits and patterns in thinking, feeling, and acting can affect how nurses deal with stress, communicate with patients and coworkers, and adapt to changes in the hospital environment. Some traits may help in certain situations but may not be as effective in others (Judge & Zapata, 2021). This shows the need to carefully examine how the Big Five personality traits, openness, conscientiousness, extraversion, agreeableness, and neuroticism affect nurses in their everyday work.

Even though previous studies have shown that personality traits influence job performance in many careers (Johnson, Smith & Davis, 2021 & Alloush *et al.*, 2022), there is little research that looks specifically at nurses working in Edo State's public hospitals. These hospitals face their own challenges, such as limited supplies, too many patients, and difficult administrative systems, which may change how personality traits affect job performance. Also, many studies do not consider how age and sex may affect this relationship, even though these factors could change how personality traits appear in job behaviour. This lack of local research makes it harder for hospital managers in Nigeria to make smart decisions about hiring or training. Without understanding how

personality, age, and sex affect performance, it's difficult to choose the right staff or help them improve. That's why this study is important to investigate how nurses' personality traits, along with their sex and age, influence how well they perform their jobs in public hospitals across Edo State.

Objective of the Study

The purpose of this study is to investigate the interaction of personality traits as predictors of job performance among nurses in public hospitals in Edo State of Nigeria. Specifically, the study sought to examine the:

- a) interaction of sex and personality traits on job performance of nurses in public hospitals in Edo State;
- b) interaction of age and personality traits on job performance of nurses in public hospitals in Edo State.

Hypotheses of the Study

The following null hypotheses were formulated and tested in this study

- H₀₁: There is no significant influence of sex in the relationship between personality traits and job performance of nurses in public hospitals in Edo State
- H₀₂: There is no significant influence of age in the relationship between personality traits and job performance of nurses in public hospitals in Edo State

Conceptual Review

The concept of personality traits serves as a fundamental pillar in understanding the rich tapestry of human behaviour, encompassing enduring patterns of thoughts, emotions, and behaviour that distinguish one individual from another. This conceptualization draws from various psychological theories and frameworks, offering a comprehensive understanding of how individuals navigate and respond to the world around them.

The word "personality" originates from the Latin word *persona*, which means mask (Stevko, 2014). Personality also refers to the pattern of thoughts, feelings, social adjustments, and behaviour consistently exhibited over time that strongly influences one's expectations, self-perceptions, values, and attitudes (Srivastava & Mishra, 2016). It also predicts human reactions to other people, problems, and stress. Several empirical and conceptual classifications of personality traits have been reviewed within the last three decades.

A nurse's personality trait is defined as that pattern of characteristic thoughts, feelings, and behaviour that distinguishes one nurse from another and persists over time. For this study, the researcher intended to examine the following traits, which are referred to as the big five personality traits which are: extroversion, agreeableness, conscientiousness, openness to experience and neuroticism as influenced by sex and age of nurses (Mao, Guo, Zhang, Liu & Wang, 2022).

Sex refers to the biological characteristics that distinguish male and female individuals. The sex of a nurse can affect how personality traits influence job performance. For example, male nurses who are extroverted may use their outgoing nature to build strong team dynamics and connect easily with patients, enhancing job performance. Female nurses with high agreeableness might be more supportive and cooperative with colleagues, which can improve teamwork and job

efficiency (Judge & Zapata, 2021). Additionally, conscientious female nurses might be particularly detail-oriented and reliable, positively impacting their performance. Understanding these differences can help in assigning tasks that best suit each nurse's strengths based on their personality and sex.

Age plays a crucial role in how personality traits impact job performance among nurses. Younger nurses with high levels of openness to experience may be more eager to adopt new technologies and innovative practices, enhancing their job performance. In contrast, older nurses who are conscientious might rely on their experiences and dedication to perform tasks meticulously, ensuring high standards of care (Martinez & Rodriguez, 2020). Similarly, neuroticism might affect younger nurses more severely due to less experience in handling stress, potentially impacting their performance negatively. Recognising these age-related differences can help in providing targeted support to nurses of various age groups.

Empirical Literature

Several empirical studies have examined the roles of sex, age, and personality traits in influencing individual performance across different occupational and social contexts. Mensah and Boateng (2020) studied gender differences in the Big Five personality traits across 55 countries and found that men generally scored lower in neuroticism, agreeableness, conscientiousness, and extraversion than women. The biggest gap was in neuroticism ($d = -0.40$), followed by smaller differences in agreeableness ($d = -0.15$), conscientiousness ($d = -0.12$), and extraversion ($d = -0.10$). Interestingly, countries with more gender equality showed larger personality differences between men and women. For example, France ($d = -0.44$) and the Netherlands ($d = -0.36$) showed bigger differences, while Botswana ($d = 0.00$) and India ($d = -0.01$), with less gender equality, showed little or no difference. Abebe and Bekele (2020) also looked at how personality affects academic performance in boys and girls. Their study of 666 students showed that for boys, traits like extraversion, conscientiousness, agreeableness, and emotional stability were important. For girls, openness to experience played a bigger role. Conscientiousness, however, influenced performance in both genders.

Similarly, Mekonnen (2020) studied students in Ethiopia and found that personality traits affected entrepreneurial intentions, except neuroticism, which had no major effect. Gender influenced how traits like extraversion, conscientiousness, and openness affected these intentions, with males stronger in the first two and females stronger in the last. In another study, Martinez and Rodriguez (2020) focused on how age and personality traits relate to nursing performance. They found that older nurses were more conscientious, which helped them perform their duties better, while younger nurses were more extroverted, improving teamwork and communication.

Emecheta, Awa, and Ukoha (2016) explored how personality traits predicted organisational commitment among 200 employees in Enugu. Their results showed that only openness to experience significantly influenced how committed employees were to their organisations, while the other four traits (conscientiousness, extraversion, agreeableness, and neuroticism) did not show significant effects. Supporting this view, Wang, Zhang, and Wang (2019) conducted a

meta-analysis of 20 studies involving over 7,000 nurses and found that older nurses displayed higher levels of conscientiousness and emotional stability, which were associated with lower burnout and higher job performance. This study provides strong empirical evidence that age-related personality traits play a critical role in nursing performance. Its strength lies in its large sample size and focus on nurses. However, like many large-scale studies, it treated sex as a background variable rather than examining how it interacts with age and personality traits. The present study responds to this limitation by explicitly analysing the interaction of sex, age, and personality traits as determinants of job performance among nurses in public hospitals.

The reviewed empirical studies collectively demonstrate that sex, age, and personality traits significantly influence performance-related outcomes across different contexts. However, most studies examined these variables independently or in pairs, with limited attention to their combined interaction, particularly within the nursing profession in Nigeria. Furthermore, many studies focused on academic performance, entrepreneurial intentions, or organisational commitment rather than job performance in healthcare settings. The present study addresses these gaps by empirically examining how sex, age, and personality traits interact to determine nurses' job performance in public hospitals in Edo State.

Theoretical Framework

This study is anchored on Gordon Allport's Trait Theory of Personality (1897-1967), which explains human behaviour in terms of enduring and measurable personality traits. Allport viewed traits also referred to as dispositions as consistent patterns of thought, emotion, and behaviour that distinguish individuals from one another. He identified three levels of traits: cardinal traits, which dominate an individual's life; central traits, such as honesty, friendliness, and kindness, which are generally present in most people; and secondary traits, which are situation-specific and less stable, such as anxiety before public speaking. A major contribution of Allport's theory is its emphasis on the uniqueness of individuals and the importance of present behavioural tendencies rather than past experiences alone. The theory's strength lies in its ability to categorise observable behaviour using objective criteria, making it useful for understanding, measuring, and predicting human behaviour in organisational settings such as public hospitals.

The relevance of Allport's Trait Theory to this study lies in its ability to explain how nurses' personality traits influence their job performance in public hospitals. Nursing requires emotional stability, conscientiousness, cooperation, and adaptability due to its high workload, interpersonal demands, and stressful nature (Davis & Wilson, 2019). The theory aligns with the Big Five personality traits (extraversion, agreeableness, conscientiousness, neuroticism (emotional stability), and openness to experience) which are widely used in contemporary personality research (Adams, Brown, & Clarke, 2021). In hospital administration, understanding these traits enables managers to explain differences in nurses' work attitudes, predict job performance outcomes, and implement appropriate management strategies. For instance, emotionally stable nurses are better able to cope with stress, conscientious nurses are more dependable and detail-oriented, and agreeable nurses promote teamwork and patient-centered care. Therefore, Allport's Trait Theory provides a strong theoretical foundation for

examining how inherent personality traits shape nurses' behaviour and performance, thereby supporting effective hospital administration and improved healthcare delivery.

Methodology

This study used a correlational research design to examine the interaction of nurses' sex, age, and personality traits related to their job performance in public hospitals in Edo State. This design was chosen because it allows researchers to examine relationships between variables without altering or controlling them. The focus was on how the Big Five personality traits, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism predict nurses' performance and whether these connections change based on age or sex. The total population included all 320 nurses working in 31 government hospitals across the 18 local government areas of Edo State as of October 2024. Source: Edo State Hospital Management Board, Benin City, (2024). A multistage stratified random sampling method was used to ensure fair representation. First, 31 hospitals were selected across the three senatorial zones of the state. Then, nurses were picked using purposive sampling: 40% of nurses from the large Central Hospital in Benin City and all nurses from the other 30 hospitals, totalling 222 participants. This method ensured relevant participants were included while also representing all subgroups fairly.

Data were collected using the "Personality Traits and Nurses' Job Performance Questionnaire (PTJPNQ)", based on John and Srivastava's (1999) Big Five personality scale and Schwirian's (1978) job performance scale. The tool had three parts: personal details, 25 personality trait items tailored to hospital settings, and 20 job performance items (10 for patient care and 10 for non-patient tasks), all rated on a four-point scale from Strongly Agree to Strongly Disagree. To ensure the tool was valid, content experts from the Department of Guidance and Counselling at Ambrose Alli University reviewed it, and construct validity was tested through Principal Component Analysis (PCA). For reliability, 30 nurses from Delta State took part in a test-retest process, with results showing strong reliability (0.73–0.84 for traits and 0.77 for performance). The questionnaire was administered over three weeks by the researcher and two trained assistants after gaining hospital approvals. In total, 222 fully completed questionnaires were analysed. Multiple Linear Regression Analysis (MLRA) was used to test how personality traits predict job performance based on sex, age, and work experience. Hypotheses were accepted or rejected based on the p-value, using 0.05 as the threshold for significance.

Results

Hypothesis 1: There is no significant influence of sex in the relationship between personality traits and job performance of nurses in public hospitals in Edo state
Table 1: Summary of Pearson-r on mean response on the influence of sex in the relationship between personality traits and job performance

Sex	Male	Female
R	.516 ^a	.600 ^a
R Square	.266	.360
Adjusted R Square	.220	.336
F-statistics	5.738	14.752
F-statistic p-value.	0.0000	0.0000
Coefficients		
(Constant)	.136 (.764)	-.429 (.258)
Openness	.268* (.055)	.267* (.005)
Conscientiousness	.396*	.380*

	(.001)	(.000)
Extroversion	.049 (.734)	.106 (.310)
Agreeableness	.081 (.473)	.198 (.076)
Neuroticism	.072 (.554)	.041 (.627)

*. Coefficient is significant at the 0.01 level (2-tailed).

P-value is in parentheses () beneath each of the estimated coefficients.

The regression analysis presented in Table 1 showed that the f-statistics for male and female sex categories were both significant ($p < 0.05$). Hence, the null hypothesis was rejected. The results showed that sex significantly influences the relationship between personality traits and job performance among nurses in public hospitals in Edo State. Specifically, traits such as openness to experience, conscientiousness, extraversion, and agreeableness together had a notable impact on both male and female nurses' job performance, while neuroticism did not show a significant effect. The data revealed that personality traits accounted for a higher percentage of job performance among female nurses (36%) compared to male nurses (26.6%). This suggests that female nurses' natural emotional sensitivity, care-driven attitude, and social interactions may enhance how their personality traits positively affect their performance. In contrast, male nurses showed a lower degree of influence from these traits. Therefore, it can be concluded that personality traits play a more powerful role in predicting job performance among female nurses, and that sex acts as a significant factor in this relationship within the public hospital context.

Hypothesis 2: There is no significant influence of age on the relationship between personality traits and job performance of nurses in public hospitals in Edo state

Table 2: Summary of Pearson-r on the influence of Age in the relationship between Personality traits and Job Performance

Age	Very Young [below 26years]	Young [26- 35years]	Old [36- 40years]	Very Old [above 40years]
R	.612 ^a	.624 ^a	.650 ^a	.565 ^a
R Square	.374	.389	.422	.319
Adjusted Square	.225	.325	.378	.266
F-statistics	2.509	6.106	9.497	5.988
F-statistics p-value	0.000	0.000	0.000	0.000
Coefficients				
(Constant)	-.090 (.906)	-.519 (.431)	-.997 (.077)	.215 (.667)
Openness	.175 (.539)	.431* (.021)	.270* (.021)	.431* (.000)
Conscientiousness	.071 (1.620)	.295* (.048)	.326* (.008)	.050 (.708)
Extroversion	.485 (.120)	.117 (.509)	-.080 (.561)	-.013 (.923)
Agreeableness	-.162 (.407)	.148 (.354)	.724* (.000)	.098 (.500)
Neuroticism	.330 (.164)	.053 (.709)	.024 (.832)	.207 (.149)

*. Coefficient is significant at the 0.01 level (2-tailed).

The regression analysis presented in Table 2 showed that none of the personality traits significantly predict job

performance among the very young nurses (below 26 years) category ($p > 0.01$). This finding confirmed that age significantly affects how personality traits relate to nurses' job performance in public hospitals in Edo State. Among very young nurses (below 26 years), none of the personality traits had a significant effect. However, for those aged 26–35, both openness and conscientiousness showed a positive influence. In the 36–40 age group, openness, conscientiousness, and agreeableness were all significant predictors of job performance, while only openness mattered for nurses above 40. Across all age categories, personality traits jointly influenced job performance, confirming the importance of age as a moderating factor. The strongest influence was seen in nurses aged 26–35 and 36–40, likely due to increased experience, emotional maturity, and social skills that grow with age. These traits help older nurses interact better with patients and colleagues, contributing to better job performance. Neuroticism did not significantly affect performance across any age group.

Discussion of Findings

The findings showed that openness to experience, conscientiousness, extroversion, and agreeableness significantly predicted the job performance of both male and female nurses ($p < 0.01$). However, neuroticism did not significantly predict job performance in either group, indicating a weak and negative relationship between neuroticism and how well nurses perform. This means male and female nurses tend to show similar levels of performance regardless of their personality traits. This finding supports the work of Vedel (2018), who discovered that sex did not significantly influence the relationship between personality traits and job performance among healthcare professionals. It is also in line with the findings of Brown *et al.* (2022), whose meta-analysis across various industries showed that gender may not have a strong impact on how personality traits relate to job performance.

The results also showed age-based differences in how personality traits affect job performance. For nurses below 25 years, none of the traits significantly predicted performance. Among those aged 26–35 years, openness and conscientiousness were strong predictors of job performance. For nurses aged 36–40 years, openness, conscientiousness, and agreeableness significantly predicted performance, while in the group above 40 years, only openness to experience showed a significant influence. Neuroticism remained insignificant across all age groups. This suggests that as nurses get older, the combination of their personality traits plays a bigger role in how well they do their jobs, especially among those aged 26–40. This may be because older nurses often gain more experience, emotional maturity, and workplace skills that shape how their personality affects their work. These findings are in agreement with Emecheta, Awa, and Ukoha (2016), who found that age significantly influenced the relationship between personality and job performance in healthcare settings. Similarly, Johnson *et al.* (2021) reported that age diversity enhances problem-solving and creativity, which can improve overall job performance.

Conclusion

This study shows that personality traits play an important role in how well nurses perform their duties in public hospitals across Edo State. The results revealed that although the effect of sex was weak, it was still significant—female nurses showed slightly better job

performance influenced by their personality traits compared to their male counterparts. The findings also indicated that older nurses, particularly those aged 36–40 years, were more likely to show improved job performance linked to their personality traits than nurses in other age groups. Overall, the study confirmed that as nurses grow older, their personality traits increasingly impact their job performance, with the strongest effects seen in those aged 25–40 years. This research filled a key gap by showing that both age and sex influence how personality traits affect nurses' performance in public hospitals.

Recommendations

Based on the findings, the following recommendations were made:

1. Hospitals should create a workplace culture that encourages and rewards cooperation and respect, especially promoting agreeable behaviour among nurses to improve teamwork and patient care.
2. Male nurses should be given access to stress management resources and emotional support systems to help them handle work pressure and stay effective on the job.
3. Training and mentoring programmes should be designed to suit the learning needs of different age groups, helping older and younger nurses share knowledge and work together more effectively.

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