



Moderated Mediation of the Association between Psychological Availability, Employee Engagement, Autonomous Causality Orientation and Adaptive Performance

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ABSTRACT

Purpose- The purpose of this study is to examine the links between psychological availability, employee engagement, adaptive performance and autonomous causality orientation in a moderated mediated manner.

Aims(s)- The study assesses the effect of psychological availability on adaptive performance and the mediated effects of employee engagement in the relationships between psychological availability and adaptive performance. The study also analyses the moderated role of autonomous causality orientation in the mediation role of employee engagement in the effects of psychological availability on adaptive performance.

Design/methodology/approach- The study was cross-sectional and quantitative in design. Data was randomly collected from 462 nurses in Ghana. Models 4 and 14 of the PROCESS macros for SPSS were used to test the hypotheses.

Findings- The results revealed that psychological availability promoted adaptive performance and employee engagement. Moreover, employee engagement mediated positively the relationships between psychological availability and adaptive performance. Furthermore, the indirect associations between psychological availability and adaptive performance through employee engagement was affected by the level of autonomous causality orientation. Thus, generally, psychological availability enhances employee engagement. This, then, results in improving their abilities to respond to changing contingencies, depending on individual characteristics.

Limitations of the study- Due to the cross-sectional nature of this study, it will be difficult to conclude a cause-and-effect relationship among the variables studied. There is also the difficulty of establishing trends due to the inability of cross-sectional studies to lend themselves to the analysis of behaviour over time. Future research should focus on longitudinal studies.

Originality/value- The investigation contributes to empirical evidence concerning the importance of psychological factors in enhancing employee engagement and adaptive performance. This paper provides proof that psychological availability and employee engagement promote adaptive performance, upholding current debates in the literature they impact behaviour.

KEY WORDS

Adaptive Performance, Autonomous Causality Orientation, Employee Engagement, Performance, Psychological Availability

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1 INTRODUCTION

The world is complex and unpredictable (Madhok, 2021), and organisations are faced with rapidly uncertain and unstable environments. Employees' capacity to rapidly adjust to change resulting from complex and swiftly dynamic work environments are prerequisites for success in modern organisations (Chua et al., 2021; Kebede & Wang, 2022). However, extant human resource management (HRM) research has not fully recognised adaptive performance (AP), which is the ability to respond effectively to dynamic and unpredictable situations, or the factors that drive it, despite its growing importance in modern workplaces (Alabri et al., 2022). Understanding the antecedents of AP is therefore critical for improving employee effectiveness in rapidly evolving work contexts (Alabri et al., 2022).

AP, which is characterised by quick decisions-making, creatively handling problems and handling stress effectively during changing work circumstances (Huntsman et al., 2021; Pulakos et al., 2000), is relevant for several reasons. At the individual level AP enhances employee's job performance capabilities (Shoss et al., 2020) and success (Jundt et al. 2014).

Given its relevance in uncertain work contexts (Zeng et al., 2020), there is a growing need to examine how psychological factors and dispositional traits influence AP. In this study, we focus on the role of psychological availability, employee engagement, and autonomous causality orientation (ACO) in shaping AP, and we propose a moderated mediation model that integrates both situational and dispositional perspectives.

Psychological availability, which is employees' belief in their cognitive, emotional, and physical readiness to engage at work, has been found to influence individual behaviours (Pala'langan & Satrya, 2023; Shi, 2022; Vu, 2024), including employee engagement (Chaudhary, 2019; Gurlek, 2020; Rabiul et al., 2023). High levels of psychological availability provide employees with the energy and confidence to immerse themselves in their roles, which can enhance adaptability in response to shifting work demands. Indeed, limited evidence suggests that psychological availability is positively associated with employees' ability to adjust quickly to changing situations (Groenen, 2021). Since employee engagement, which is a job-related state of enthusiasm, dedication, and absorption in work (Schaufeli et al., 2002; Kahn, 1990), is strongly influenced by psychological availability, we propose that engagement acts as a key mechanism through which psychological availability drives AP because of the intrinsic motivation inherent in them (Kahn, 1990).

However, employees differ in how they engage at work due to individual dispositions (Malinowska & Tokarz, 2020). One such factor, ACO, derived from Causality Orientation Theory (COT) (Deci & Ryan, 1985), reflects the extent to which individuals are self-directed, intrinsically motivated, and inclined to regulate their behaviour according to personal values and interests. Employees high in ACO are more likely to channel their psychological resources into proactive engagement and effective adaptation, whereas those low in ACO may exhibit weaker links between engagement and performance outcomes. Thus, we argue that ACO moderates the relationship between employee engagement and AP, shaping the strength of psychological availability's indirect effects.

To integrate these ideas, we relied on the employee engagement theory (EET) (Kahn, 1990) and Causality Orientation Theory (COT) (Deci & Ryan, 1985). EET explains how psychological conditions, including psychological availability, foster motivation and employee engagement at work, whereas COT captures individual differences in intrinsic motivation and behavioural regulation. Combining these frameworks provides a richer understanding of AP by incorporating both situational factors (e.g., psychological availability) and dispositional factors (e.g., ACO). This integration is particularly valuable since EET does not fully account for why employees vary in their engagement levels, whereas COT helps explain how such differences emerge. As illustrated in Figure 1, our framework proposes that psychological availability predicts AP both directly and indirectly via employee engagement, and that the strength of this indirect effect depends on employees' levels of ACO.

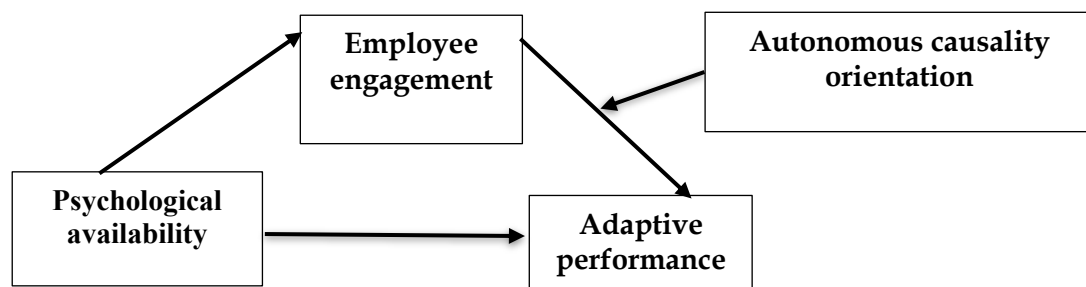


Fig 1. Theoretical Framework

Source: Constructed by authors

Despite the increasing application of EET in organisational research (e.g., Albrecht et al., 2023; Chhetri, 2017), three significant gaps remain. First, few empirical studies have applied it in the direct effect of psychological availability on AP. Second, the mediating role of employee engagement in this relationship has received limited attention, despite theoretical support suggesting its relevance.

ACO represents a relatively stable individual trait, reflecting the degree to which individuals are self-directed, assertive, and inclined to act according to their interests and values (Deci & Ryan, 1985b). These dispositional traits shape how individuals respond to environmental cues, such as workplace demands and engagement opportunities. Thus, the level of ACO may influence how employee engagement translates into AP. Previous research has argued that such dispositional factors are crucial in understanding variations in employee engagement and its outcomes (Malinowska & Tokarz, 2020).

Moreover, individual characteristics such as cognitive ability (Good, 2014) and emotional stability (Huang, Ryan, Zabel, & Palmer, 2014) have been found to significantly relate to AP. ACO can affect the level of individuals' responses to their work environments, including determining the level of the effect of employee engagement on AP. Studies have suggested that causality orientations (e.g., ACO) affect behaviour (e.g., Behzadnia, 2021; Ceylan-Batur & Uskul, 2022; De Geiter & Hofmans, 2015; Hagger et al., 2015; Hagger & Hamilton, 2021; Li et al., 2016; Ye et al., 2014). However, little is known about how individual dispositional factors, particularly ACO, shape the employee engagement–performance relationship in dynamic work contexts. Addressing these gaps advances current understanding by providing a more integrated, moderated mediation perspective on AP.

Accordingly, this study examines the interrelationships among psychological availability, employee engagement, ACO, and AP. Specifically, we test a moderated mediation model in which psychological availability predicts AP, employee engagement mediates this relationship; and ACO moderates the engagement–performance link, such that the mediation effect varies depending on levels of ACO.

This investigation makes three contributions. First, it extends EET and COT by demonstrating how psychological availability influences AP via employee engagement and by uncovering the conditional role of ACO. Second, it advances HRM literature by clarifying how psychological and dispositional factors jointly shape adaptability in dynamic work settings. Finally, it contributes to AP research by identifying employee engagement as a key explanatory mechanism and ACO as an important boundary condition.

In sum, this study proposes a moderated mediation model linking psychological availability, employee engagement, ACO, and AP. By integrating EET and COT, we provide a comprehensive framework that explains how psychological readiness and intrinsic motivation interact to influence employees' adaptability in fast-changing work environments.

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This section reviews the literature on the theories underpinning the study, the concepts of psychological availability, employee engagement, AP, ACO, and empirical arguments, leading to the development of the hypotheses. The employee EET and the COT are the theories underpinning this study. The EET (Kahn, 1990) proposes that employees have perceptions about the work environment which influence their decisions to be engaged or disengaged. According to the theory, employees ask themselves whether their jobs are meaningful enough to warrant performance, whether they are safe to immerse themselves in performance and whether they are psychologically available to do so. The extent to which an employee experiences any one of these feelings forms the basis for employees to become engaged (Kahn., 1990).

Deci and Ryan's (1985b) COT, situated within the broader framework of self-determination theory, offers a dispositional lens for understanding how individuals initiate and regulate their behaviour. Of the three causality orientations proposed, this study focuses exclusively on COT, which reflects a stable individual tendency to act based on personal interests, intrinsic motivation, and self-endorsed values (Deci & Ryan, 1985b). Individuals high in this orientation perceive themselves as the origin of their actions and are more likely to engage with tasks when they find them personally meaningful and aligned with their internal goals (Deci & Ryan, 1987; Ryan, 2009).

Intrinsic and self-directed motivation are particularly relevant when considering how psychological availability translates into AP via employee engagement. While psychological availability

has been identified as a key antecedent of engagement (Kahn, 1990), the strength of its impact on engagement, and ultimately on AP, can vary depending on the individual's motivational orientation.

ACO is proposed as a moderator in this conditional indirect effect. Specifically, individuals with high autonomous orientation are more likely to convert psychological availability into authentic and sustained engagement, as they experience work not as a set of external demands, but as an opportunity to enact their self-congruent goals. In turn, this heightened engagement enhances their capacity for AP, which involves responding flexibly and effectively to changing job demands. Conversely, for individuals lower in autonomous orientation, the same level of psychological availability may not lead to comparable engagement or adaptive outcomes, as their motivational basis may be less aligned with internalised values.

The integration of COT with EET (Kahn, 1990, 1992) provides a richer conceptual framework for understanding this mechanism. While Kahn's model highlights the importance of psychological conditions, including psychological availability, in facilitating employee engagement, it offers limited insight into the individual differences that influence how these conditions lead to behavioural outcomes. COT addresses this gap by introducing the role of dispositional motivation, particularly autonomous orientation, in shaping how individuals interpret and respond to engagement-enabling conditions.

This theoretical complementarity aligns with Koole et al.'s (2019) argument that micro-level personality theories, like causality orientation theory, can enrich broader process models by accounting for variation in how individuals experience and act upon internal psychological states. Furthermore, prior studies (e.g., Liu et al., 2023) have emphasised that engagement alone does not uniformly affect behaviour; instead, the interplay between psychological conditions and individual traits determines the ultimate behavioural expression. Thus, the inclusion of ACO as a moderator strengthens the explanatory power of the employee engagement-AP pathway.

2.1 PSYCHOLOGICAL AVAILABILITY AND ADAPTIVE PERFORMANCE

Psychological availability is individuals' feeling of confidence that they possess the physical, emotional, and psychological resources required to engage at work (Kahn, 1990; May et al., 2004; Rothmann & Rothmann, 2010). Employees manifest psychological availability by experiencing the absence of security, distraction and contradictions at work, confidence in one's capacity and self-awareness (Kahn, 1990). Because psychological availability engenders confidence in an individual's capacity to handle complex situations at work (Kahn, 1990), it can lead to AP.

AP is employees' capacity to quickly respond to continuously dynamic work environments in terms of decisions-making, creatively handling problems and handling stress effectively (Huntsman et al., 2021; Pulakos et al., 2000). The dimensions of AP include remaining calm, attentive and feeling at ease during changing work situations (Chan, 2000). AP was found to be associated with several factors, including employee empowerment (Huntsman et al., 2021), psychological capital (Luo et al., 2021) and empowered leadership (Xu & Zhang, 2022). Earlier studies found supportive managers (Cullen et al., 2014), self-efficacy (Marques-Quinteiro et al., 2015) and employee engagement (Eldor & Harpaz, 2016) as drivers of AP. Nevertheless, there is a lack of research on the relationship between psychological availability and AP. AP may be contingent on the level of psychological availability.

In line with EET (Kahn, 1990), when employees are psychologically available, they become intrinsically motivated and confident in their capabilities to handle challenging situations at work. This theoretical proposition, together with inconsistent findings regarding the drivers of AP (Park & Park, 2019), highlights the need for further examination of the factors that influence AP. In light of this, we hypothesise that:

H1: Psychological availability positively predicts AP.

2.2 PSYCHOLOGICAL AVAILABILITY AND EMPLOYEE ENGAGEMENT

Psychological availability connotes an individual's belief of possessing psychological capacities that are needed for a decision to become engaged or disengaged (Kahn, 1990; May et al., 2004; Rich et al., 2010;

Saks & Gruman, 2014). The empirical literature provides support for the relationship between psychological availability and employee engagement, aligning with Kahn's (1990) framework. Beltrán-Martín, et al. (2022) found that psychological availability, mediated the link between HR systems and engagement among Spanish employees. Similarly, Rabiul et al. (2023) found positive and significant links between psychological availability and employee engagement in the hospitality sector. In other sectors, Wijerathna and Bandara (2023) Jayasena (2023) demonstrated that psychological availability directly promoted employee engagement among staff in insurance and education, respectively. Extending these findings to healthcare, Wan, Liu, Zhang and Yang, (2024) showed that psychological availability predicted job engagement among health professionals. These recent studies confirmed earlier studies (Chaudhary (2019; Lába & Geldenhuys 2016), although some studies have reported contradictory evidence (e.g., Chikoko et al., 2014).

Despite these insights, some gaps remain. First, the contradictory results conflict with EET assumptions, which view availability as a positive construct that results in employee engagement. This indicates the need to further evaluate the effect of psychological availability on employee engagement. Second, studies have been sector-specific (e.g., hospitality, healthcare, academia) and conducted in single-country contexts, limiting the generalisability of findings across industries and cultures. There is also limited evidence from emerging economies where psychological resource depletion and work engagement dynamics may differ substantially.

Addressing these gaps, the present study seeks to extend prior work by examining the association between psychological availability and employee engagement within understudied context, providing empirical insights that enhance the understanding of how employees' psychological resources contribute to employee engagement and overall workplace outcomes. Therefore, when people become psychologically available, their confidence to handle difficult situations at work becomes boosted, resulting in employee engagement (Kahn, 1990). We thus conjecture that:

H2: Psychological availability positively affects employee engagement.

2.3 EMPLOYEE ENGAGEMENT AND ADAPTIVE PERFORMANCE

According to EET, individuals who are highly engaged invest their intellectual, emotional and physical selves in their work roles (Kahn, 1990). As a result, employees with strong engagement tend to perform at higher levels due to their enthusiasm, commitment and passion for their roles (Cudjor, 2022; Kaya & Karatape, 2020). Research by Kaya and Karatape (2020), as well as Park et al., (2020), supports a positive relationship between employee engagement and AP. Thus, it can be inferred that nurses who are more engaged are likely to demonstrate enhanced AP.

Nevertheless, there appears to be limited empirical evidence specifically exploring how employee engagement influences AP in nursing. For instance, studies by Ghazawy et al. (2021), and Al Badi et al. (2023), found a favourable link between engagement and overall job performance, though they did not focus directly on AP. Moreover, Zahari and Kaliannan (2023) highlight a gap in research concerning the impacts of employee engagement within the public sector.

Given that employee engagement enhances motivation, its benefits may extend beyond the mere dedication, absorption and vigour at work to potentially boosting AP as suggested by EET (du Plooy et al., 1990). Therefore, it is reasonable to suggest that employee engagement could contribute to AP. Based on this reasoning, we propose the following:

H3: Employee engagement positively predicts AP

2.4 MEDIATING ROLE OF EMPLOYEE ENGAGEMENT

Empirical research has demonstrated a direct link between psychological availability and AP (Cudjor, 2022). Furthermore, existing studies suggest that psychological availability is associated with employee engagement (Rabiul et al., 2023), and that employee engagement, in turn, is positively related to AP (e.g., Kaya & Karatape, 2020; Park et al., 2020). Studies have also identified employee engagement as a mediator between various antecedents and work-related outcomes (Han et al., 2020; Qurrahtulain et al., 2020;

Saptarini & Mustika, 2023; Tang et al., 2024; Yang et al., 2019). For instance, Yang et al. (2019), in a study of the educational sector, found that employee engagement mediated the association between psychological adaptability and successful professional functioning. In addition, Saptarini and Mustika (2023) found that employee engagement mediated the relationship between workforce agility and AP among government sector employees, confirming employee engagement's role in translating organisational or individual agility into actual adaptive work behaviour. In support, Tang et al. 2024 in a systematic literature review found that components of positive psychology, including engagement, generally improve AP. Thus, engagement consistently operates as a mediator within broader psychological mechanisms of adaptation

Although engagement is well-established as a mediator for many resource-performance pathways, its potential mediating role in the relationship between psychological availability and AP remains unexplored. Investigating this pathway is essential for enhancing theoretical insights into how these variables interact and for clarifying the mechanisms behind their interrelations (Hayes, 2018). Identifying engagement as a mediating mechanism offers clear levers for organizations. Interventions like training, resource allocation, or leadership that increase engagement could activate psychological availability to result in adaptive behaviour.

Consequently, there is a pressing need to gather empirical data that explores whether employees who feel mentally present and resilient at work are more likely to become engaged in their roles, which may, in turn, lead to improved job outcomes (Han et al., 2020; Kahn, 1990). From this perspective, employee engagement serves as a key psychological conduit linking psychological availability to AP. As noted by Kahn (1990), individuals who are psychologically available tend to immerse themselves fully in their work, resulting in favourable outcomes such as AP. Accordingly, we hypothesize that:

H4: Psychological availability positively affects AP through employee engagement.

2.5 MODERATED MEDIATION OF EMPLOYEE ENGAGEMENT

COT suggests that ACO is a unique, stable personality trait that influences how individuals perceive motivational triggers and interpret workplace cues (Deci & Ryan, 1985b; Ryan & Deci, 2017). Individuals high in ACO are inclined to act in ways that align with their personal values, interests, and internal needs (Ryan & Deci, 2006). In the workplace, employees with strong autonomous orientations typically act voluntarily, are intrinsically motivated, understand the significance of their work, operate with a strong sense of ownership, and engage willingly in their roles (Ryan & Deci, 2017). These individuals also tend to self-regulate and focus inwardly on their experiences, particularly when under pressure (Martinek et al., 2020; Weinstein et al., 2012). Olesen et al. (2010) argue that such behaviour stems from the individual's internal values and personal standards. Similarly, Jerkovic et al. (2017) emphasize that actions driven by a high degree of autonomy orientation are rooted in one's personal beliefs and intrinsic motivations.

While research has established various antecedents and outcomes of employee engagement (e.g., Gulyani & Sharma, 2018; Gupta, 2017), these relationships may not hold uniformly across individuals with different levels of ACO. In other words, not all employees, including nurses, will respond to engagement in the same way due to variations in their dispositional autonomy. For example, Van den Broeck et al. (2011) examined the interplay between job autonomy, employee engagement, and autonomous motivation. Their findings showed that autonomous motivation significantly moderated the impact of job autonomy on employee engagement. However, it's important to recognise that while autonomous motivation is a context-specific regulatory style, ACO represents a long-standing personality trait that influences behaviour across diverse situations (Malinowska & Tokarz, 2020; Ryan & Deci, 2017).

Malinowska and Tokarz (2020) also explored the interaction between job resources, employee engagement, and ACO. They found that ACO significantly moderated the relationship between job resources and engagement. However, these studies primarily used simple moderation models. What remains underexplored is how ACO might function as a moderator in a moderated mediation framework, specifically, in the indirect relationship between psychological availability and AP through employee engagement.

According to EET, a supportive work environment fosters positive psychological experiences. When employees feel psychologically available, they demonstrate confidence, presence and resilience, making them more inclined to fully engage with their work (Kahn, 1990). This in turn, can enhance AP, as such employees tend to be more enthusiastic, passionate, and committed (Cudjor, 2022). From the perspective of COT, it is likely that the degree to which psychological availability translates into AP through employee engagement depends on employees' levels of ACO. We propose that ACO moderates the indirect effect of psychological availability on AP via employee engagement.

Given the characteristics of highly autonomous causality-oriented individuals, such as personal accountability, dissatisfaction with underperformance, and the intrinsic pursuit of personal goals (Ryan & Deci, 2017), it is reasonable to expect that the direct influence of employee engagement on AP will be stronger among those with high ACO than among those with low ACO.

However, existing literature suggests a potential ceiling effect. Individuals with high ACO already exhibit elevated levels of engagement (Malinowska & Tokarz, 2020). This may limit the extent to which increased engagement can further amplify AP. Additionally, highly autonomous individuals tend to possess strong intrinsic motivation and are generally more psychosocially mature, which influences how they integrate psychological and social cues into behaviour (Malinowska & Tokarz, 2020). This raises the possibility that at very high levels of ACO, the indirect effect of psychological availability on AP through engagement could diminish. For that reason, we proposed that:

H5: The indirect relationship between psychological availability and adaptive through employee engagement is associated with the level of ACO such that the conditional indirect effect is lower at higher levels of ACO than at lower levels of ACO.

2.6 CONCEPTUAL FRAMEWORK

Figure 2 represents the conceptual framework derived from the literature review, which informed all the hypotheses. From the conceptual framework, psychological availability is associated with AP (H1) and employee engagement (H2). The framework also shows that AP is affected by employee engagement (H3). Additionally, the relationship between psychological availability and AP is mediated by employee engagement (H4). Furthermore, ACO serves as a boundary condition in the extent to which employee engagement mediates the psychological availability and AP relationship (H5)

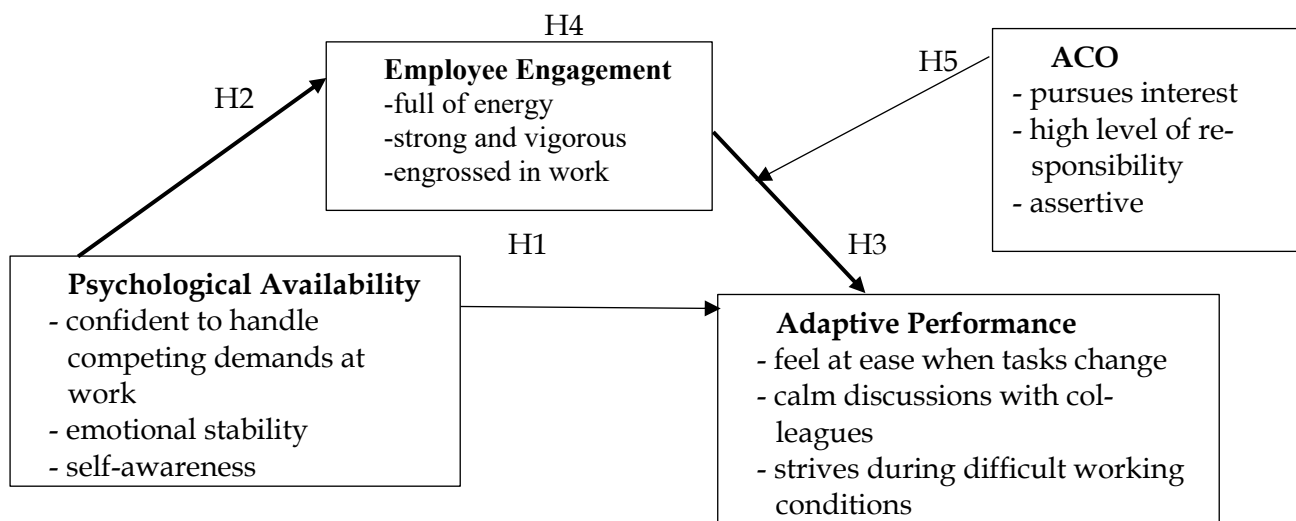


Fig 2. Conceptual Model of the Links between Psychological Availability, Employee Engagement, Autonomous Causality Orientation and Adaptive Performance

Source: Authors' own elaboration

3 METHODOLOGY

3.1 RESEARCH APPROACH

The research approach for this study is the quantitative and cross-sectional, relying on collection of numerical data and inferential statistical analysis (Bryman, 2012). The research design aligns with the aim of this study to examine how causality orientation perspectives are employed to explain autonomous causality orientation as an intervening variable in the psychological availability, employee engagement and AP relationships. This design involves less time in data analysis and the collection of large amounts of data, which if representative, will allow for the generalisation of the findings to the population, in contrast to qualitative approaches (Connolly, 2007; Leedy & Ormrod, 2010).

3.2 SAMPLE

The unit of analysis for this research were nurses in Ghana. Due to largeness of the population, Cochran's (1963) approach for sample size determination was used due to the largeness of the population. The sample size = $Z^2 pq / e^2$, confidence level of 95 % and desired level of precision at 5 %, Z^2 (cut-offs of the area under the normal curve), e^2 (level of precision), p (degree of variability), $q(1-p)$. Therefore, a minimum of 385 respondents was deemed sufficient to achieve the desired precision. To account for potential nonresponse, an additional 20% was added, resulting in a final target sample size of 462 participants.

3.3 MEASUREMENT OF CONSTRUCTS

AP was measured using the four components of Pulakos et al.'s (2000) AP scale. Each of the components has 6 items. The handling emergencies dimension items include "responding quickly to emergencies when unexpected situations arise". The dimension of managing stress include "remaining calm and able to function effectively under pressure". Dealing with uncertain work conditions include "performing effectively when the situation lacks clear guidelines". The final dimension, *interpersonal adaptability*, includes items such as "adjusting communication style depending on the situation." A 7-point Likert scale was used, ranging from 1 (strongly disagree) to 7 (strongly agree).

Measurements of the psychological availability involved May et al.'s (2004) scale derived from the EET. The items were rated on a 7-point Likert scale, ranging from 1 (very weak agreement) to 7 (very strongly agree). The items for psychological availability include "I am confident in my ability to handle competing demands at work".

The 9-item Utrecht Work Engagement Scale (Schaufeli et al., 2006) was adopted to measure employee engagement. The items were scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (always). A sample of the items is "I get carried away when working".

The ACO was measured by indicators revealed in the COT (Deci & Ryan, 1985b; Deci & Ryan, 1987). Items were scaled on a 7-point Likert scale varying from 1 (least likely) to 7 (very likely). Some items on the scales are "pursuing one's interest", "displaying high level of responsibility" and "being assertive".

All the scales were reliable and valid based on data collected from the nurses (Table 1 in the results section). Cronbach's Alpha for all the constructs (α) varied from 0.882 to 0.927 ($\alpha > 0.75$). The criteria for composite reliabilities (CR) were met for all the constructs (CR > 0.6).

3.4 DATA COLLECTION

Data from nurses were collected concurrently in 14 randomly selected hospitals with the help of field assistants. The questionnaires were sent via email to the field assistants. Each field assistant was assigned to one hospital. Since this study was not aimed at comparing results from different hospitals, the sample size was equally apportioned to each of the 14 hospitals. With the help of sample frame of nurses, the

respondents were randomly selected. The survey data acquired facts and experiences on psychological availability, employee engagement, AP and ACO.

The sampling process was conducted using IBM SPSS Statistics (Version 21), utilizing the “select cases” function to randomly generate the required sample. A random seed was applied to ensure the reproducibility of the selection process. Selected respondents were subsequently contacted and invited to participate, and replacements were drawn randomly from the reserve list where necessary. Selected participants were invited and provided with written information about the study and gave informed consent prior to participation. No intervention or experimental manipulation was conducted, and participants were informed of the study objectives prior to participation. All respondents provided voluntary, informed consent and were assured that their participation was confidential and anonymous.

3.5 DATA ANALYSIS

The analysis involved descriptive statistics from data collected from the nurses was performed by using tools for the IBM Statistical Package for Social Sciences (SPSS) inter-scale correlation analysis. Model 4 of PROCESS macro for SPSS was used to test the direct relationships (H1, H2 and H3) and the mediation effect (H4). The moderated mediation (H5) was tested using the PROCESS macro for SPSS Model 14. The moderated mediation effect reveals whether, at certain levels of the moderator (ACO), the mediation effect still exists. The sample size for bootstrapping was 5, 000 at 95 per cent confidence intervals (CIs).

4 RESULTS

4.1 DESCRIPTIVE STATISTICS OF CONSTRUCTS

Out of 462 respondents, 393 valid responses were obtained, representing 85.06%. Responses were considered invalid and excluded if missing data exceeded 20% (Hair et al., 2021). Of the valid respondents, 286 were female (61.90%) and 176 were male (38.09%). In terms of age distribution, 201 respondents (43.50%) were between 20 and 30 years old, 152 (32.90%) were between 31 and 40 years old, and 109 (27.92%) were between 41 and 50 years old. Regarding work experience, 102 respondents (22.08%) had less than one year of experience, 258 (55.84%) had between 1 and 5 years of experience, 85 (18.40%) had between 6 and 10 years of experience, and 17 (3.68%) had more than 10 years of experience.

To make meaning of data collected from the respondents, means, standard deviations and correlation coefficient values were developed to understand the study variables. The results presented in Table 1 were produced by IBM SPSS Statistics Version 21. From the table, all the correlations were significant at $p < 0.01$.

Table 1. Descriptive Statistics of Constructs

Constructs	Mean	Standard deviation	1	2	3	4	Cronbach's Alpha	rho_A	Composite Reliability	VIF
1 Psychological Availability	5.473	.934	1				0.934	0.944	0.943	2.128
2 EE*	4.719	.786	.728	1			0.927	0.929	0.937	2.154
3 AP	4.772	.630	.519	.456	1		0.882	0.895	0.905	
4 ACO	4.587	1.072	.174	.205	.280	1	0.916	0.932	0.927	1.045

Note: All correlations were significant at $p < .01$ *Employee engagement
Source: Authors' own elaboration

The results in Table 1 indicate internal consistency based on Chin's (1998) composite reliability (CR) and Cronbach's Alpha (α) showed that all the construct items were internally consistent (CR > 0.6) (Nunnally & Bernstein, 1994), and $\alpha > 0.75$. From the table inter construct correlations were significant. The multicollinearity results in Table 1 were determined using the variance inflation factor (VIF). The results showed that multicollinearity ranged from 1.045 to 2.154, indicating that multicollinearity was not a concern (VIF>5) (Kock, 2015).

In order to examine potential common method bias, we run the inter-construct correlations among the variables and Harman’s single-factor test through exploratory factor analysis using unrotated principal component analysis. From the results in Table 1, the highest correlation was 0.786, which is below the 0.85 threshold, suggesting that there were no issues with common method variance (Podsakoff et al., 2003).

The above result was confirmed by Harman’s single-factor test in Table 2. The factor structure yielded ten components. Component 1 reflected work vigour and personal resourcefulness, indicated by high loadings on energy, resilience, and perceived capability. Component 2 represented value-driven self-regulation, comprising items related to intrinsic motivation, responsibility, and behavioural alignment with personal values. Component 3 captured rapid cognitive processing and decisiveness, with strong loadings on quick analysis, decision-making, and composure. Component 4 corresponded to task immersion, characterised by deep absorption and difficulty disengaging from work. Component 5 denoted cognitive focus, reflecting sustained attention and resistance to distraction. Component 6 represented stress-buffering emotional regulation, indicating the capacity to maintain performance under pressure. Component 7 reflected adaptability to adverse conditions, with loadings on functioning effectively despite discomfort. Component 8 captured interpersonal adaptability and collaborative responding, reflected in seeking collegial input and maintaining composure in social situations. Component 9 represented situational responsiveness, particularly timely and appropriate role-related adjustment. Finally, Component 10 denoted emotional stability in dynamic task environments, characterised by comfort and functionality amid rapid task changes.

Table 2. Total Variance Explained

Components	Eigenvalue	% of Variance	Cumulative %
1	15.198	31.662	30.889
2	4.061	8.461	38.383
3	2.325	4.844	42.421
4	2.114	4.404	45.832
5	1.775	3.697	48.694
6	1.632	3.401	51.213
7	1.414	2.946	53.390
8	1.200	2.500	54.953
9	1.100	2.292	56.356
10	1.047	2.182	57.571

Source: Authors’ own elaboration

The retained components (eigenvalue > 1) accounted for 57.571% of the total variance explained in the data. From the results, the first factor accounted for 30.889 % of the total variance, which is below the 50% recommended threshold (Podsakoff et al., 2003), suggesting that common method bias was not a significant problem to the study’s results.

4.2 HYPOTHESIS TESTING

PSYCHOLOGICAL AVAILABILITY, EMPLOYEE ENGAGEMENT AND AP

Table 3. Relationships among Psychological Availability, Employee Engagement and AP

Path	Coefficient (B)	Se	T	P	LLCI	ULCI
H1: PA->AP	.268	.030	8.933	.0001	.209	.327
H2: PA-> EE	.612	.012	51.0	.0001	.571	.654
H3: EE->AP	.087	.041	2.122	.0362	.007	.168
Mediation Result						
	Coefficient (B)	BootSE	BootLLCI	BootULLCI		
H4: Availability->EE->AP	.082	.028	.027	.135		

Note: Psychological availability (PA), employee engagement (EE)

Source: Authors’ own elaboration

From Table 3, the results indicated that the relationship between psychological availability and AP was positive and significant ($B = .268, p = 0.0001$), confirming hypothesis H1. Additionally, psychological availability affected employee engagement positively and significantly ($B = .612, p = .0001$), supporting H2 and the EET proposition that positive psychological work experiences are the basis for employee engagement (Kahn, 1990). Besides, employee engagement predicted AP positively and substantially ($B = .087, p = .0362$). Therefore, hypothesis H3 was supported. These findings are consistent with the suggestions of the EET, which viewed psychological availability as a requirement for employee engagement, which because it is embedded with internal motivation, results in positive individual outcomes (Khan, 1990).

MEDIATING ROLE OF EMPLOYEE ENGAGEMENT

The mediation results are presented in Table 3. The results indicated that employee engagement mediated the relationship between psychological availability and AP, validating the expected results in H4. This finding aligns with the proposed directions in the conceptual framework based on EET. The finding also aligns with preceding studies that identified employee engagement as a mediator between various antecedents and work-related outcomes (Han et al., 2020; Qurrahtulain et al., 2020).

MODERATED MEDIATIONS OF EMPLOYEE ENGAGEMENT

Table 4 presents the moderated mediation for employee engagement across levels of ACO in the effect of psychological availability on AP. The results showed that the indirect effect of psychological availability on AP through employee engagement is strongest when ACO is low (effect = 0.119; 95% CI = [0.046, 0.185]), and weakest when ACO is high, at which point it becomes non-significant (effect = 0.011; 95% CI = [-0.059, 0.066]). Since the index of moderated mediation is negative (-0.050), as ACO increases, the indirect effect of psychological availability on AP through employee engagement decreases. This effect is statistically significant (95% CI = [-0.059, -0.020]). This validates hypothesis H5 and aligns with the COT that individuals' motivations are affected by how they regulate their behaviours in response to various aspects of their environments (Ryan, 2009).

Table 4. Moderated Mediation for Employee Engagement Across Levels of ACO in the Effect of Psychological Availability on AP

ACO	Effect (B)	BootSE	BootLLCI	BootULCI
Low	.119	.036	.046	.189
Average	.065	.029	.005	.118
High	.011	.032	-.059	.066
Index of moderated mediation				
	Index			
ACO	-.050	.016	-.083	-.020

Source: Authors' own elaboration

5 DISCUSSIONS

The overall purpose of this investigation was to assess the mediating effect of employee engagement in the relationships between psychological availability and AP and the moderated mediation of ACO in the indirect effect of employee engagement on AP. As we suggested, psychological availability had a positive effect on AP. A possible explanation for these findings is that psychologically available employees have confidence in their abilities, which might result in AP. Furthermore, psychological availability positively predicted employee engagement. This is similar to the finding by Łaba and Geldenhuy (2016) that psychological availability raised employee engagement. A possible explanation for these findings is that psychologically available employees are prepared to exert the whole self in performance [employee engagement] (Rich et al., 2010)

Additionally, employee engagement predicted AP positively and substantially. This result is similar to Van den Heuvel et al.'s (2010) and Dickinson's (2021) findings that more AP is facilitated by employee engagement due to employee engagement's associations with positive emotions and motivation (Kaltainen & Hakanen, 2020). The results also revealed that the relationship between psychological availability and AP was positively and substantially mediated by employee engagement. A possible explanation is that since availability is associated with security (Rothmann & Rothmann, 2010), absence of distraction and contradictions at work, self-awareness and confidence in one's ability (Kahn, 1990), it enhances an individual's readiness to engage in role performance (Kahn, 1990), which then results in AP. Generally, these results supported the investigations that have emphasised employee engagement as a mediator between various drivers and outcomes of employee engagement (Christian et al., 2011; Han et al., 2020; Qurrahtulain et al., 2020; Van Wingerden & Van der Stoep, 2018).

Finally, the result associated with the moderated mediation indicated that ACO moderated the indirect effect of employee engagement on the relationship between psychological availability and AP. This means that when nurses become engaged due to confidence in their abilities (psychological availability) their responses in terms of making quick decisions and working in uncomfortable conditions (AP) depend on their levels of accepting responsibility, disappointment with poor performance, willingness, knowing the value of their jobs and feeling like part-owners (ACO).

5.1 THEORETICAL IMPLICATIONS

Recent studies on AP largely focused on influencing factors other than psychological availability and ACO (e.g., Badran, & Akeel, 2020; Yu, 2020; Zhang, Nantsupawat, & Thungjaroenkul, 2021). This study integrated the EET and the COT to examine some other factors that affect AP. Application of this model added to the comprehension of psychological availability, employee engagement and ACO as factors, mechanisms and boundary conditions of the psychological availability, employee engagement, ACO and AP relationships.

This investigation contributes to the knowledge of AP from an HRM viewpoint by providing evidence of the complex relationships among psychological availability, employee engagement, ACO and AP. The finding of the moderating role of ACO on the indirect effect of employee engagement in the relationship between psychological availability and AP added a new perspective.

The integration of the EET and COT demonstrates that employee engagement is not a one-size-fits-all mechanism through which workplace variables are connected. By showing that autonomous causality orientation moderates the indirect path from psychological availability to AP via employee engagement, we have shown through an integrated model that blending psychological states (psychological availability), job-related states of mind (employee engagement) and trait-based motivation (ACO) in determining dynamic performance outcomes is vital. This model is critical in designing workplaces that recognise and cultivate individual motivation styles and not just provide blanket employee engagement strategies. The theoretical integration in this study can be a guide in other fields, particularly human resource management.

Furthermore, this study advances HRM theory by examining the moderating role of ACO in the relationship between psychological availability and AP, mediated by employee engagement. The findings reveal that employee engagement significantly mediates the effect of psychological availability on AP, and this indirect effect is stronger among employees with lower levels of ACO. This highlights the importance of psychological availability as a predictor of both engagement and performance, and addresses a gap in the HRM literature regarding how individual motivational orientations shape the employee engagement-performance pathway.

By integrating EET with COT, the study offers a nuanced understanding of how psychological work experiences translate into AP. The analytical framework demonstrates that psychological availability alone is not sufficient; its impact depends on employees' motivational orientation. Those who are psychologically available and engaged, especially when driven by intrinsic motivation, exhibit greater dedication, enthusiasm, and adaptability. These insights open new avenues for HRM scholars and

practitioners to design interventions that enhance psychological availability and foster engagement, ultimately improving AP through a more personalised theory-driven approach.

In summary, the findings of this study provide some theoretical implications. The investigation contributes to empirical evidence concerning the importance of psychological availability in enhancing employee engagement and AP. The work of Kahn (1990) suggests that psychological availability is relevant for employee engagement, which has positive individual and organisational outcomes (Kahn, 1990; Saks & Gruman, 2014). This paper provides proof that psychological availability and employee engagement promote AP because they are embedded with internal motivation. This upholds current debates in the literature regarding psychological availability and employee engagement as constructs that impact behaviour (Bailey et al, 2015; Malik, et al., 2014, Obuobisa-Darko, 2020; Uddin, Mahmood & Fan, 2019).

5.2 PRACTICAL IMPLICATIONS

This study offers valuable practical insights for organizations and policymakers. By understanding how psychological availability, manifested through employees' confidence in their abilities, and their levels of dedication, passion, and enthusiasm toward work influence performance, organizations can design targeted interventions to enhance psychological readiness and employee engagement. To foster favourable responses to changing work conditions, it is essential that both organisational leaders and policymakers prioritise these psychological factors. Furthermore, attention must be given to individual dispositional traits, such as dissatisfaction with poor performance, assertiveness, and personal goal orientation, as these characteristics significantly shape employees' capacity to adapt to evolving workplace demands, even when they are otherwise engaged and motivated.

The findings underscore psychological availability as a critical driver of AP, particularly in healthcare settings. Health sector managers and policymakers should focus on improving the psychological availability of frontline workers, such as nurses, whose roles demand high adaptability under challenging conditions. This is especially pertinent in developing countries like Ghana, where nurses face mounting pressure to deliver quality care despite limited resources and infrastructure. Enhancing psychological availability in such contexts can foster greater enthusiasm, commitment, and resilience among healthcare professionals.

For learners and researchers, this study provides a foundational reference for exploring the boundary conditions of employee engagement. It demonstrates that ACO significantly moderates the indirect effect of psychological availability on AP through engagement. These findings align with EET (Kahn, 1990, 1992), which posits that psychological availability experiences, driven by internal motivation, lead to positive outcomes such as AP. When nurses feel confident in their capacity to handle complex situations at work, they are more likely to adjust their behaviours in response to changing demands.

In the field of HRM, this research offers actionable insights for enhancing workforce adaptability. HR professionals in healthcare must recognise the importance of psychological availability and employee engagement in sustaining AP. Creating work environments that foster confidence, autonomy, and psychological safety is essential for enabling employees to thrive amid rapid change. Additionally, HR practitioners should consider dispositional traits during recruitment and selection, as characteristics like assertiveness, self-direction, and intolerance for poor performance influence employees' adaptive capacity. Ultimately, these findings can inform strategic HRM practices aimed at cultivating a resilient and responsive workforce.

5.3 LIMITATIONS

A limitation of this study is that although we examined the role of ACO as an individual dispositional factor as proposed by proponents of COT, the COT identified three causality orientations. This study concentrated on the ACO. The other two constructs, impersonal causality orientation and control causality orientation were not explored in this study. This prevented the determination of how each of the constructs individually and comparatively, could have impacted the relationships. Future studies could

evaluate, comparatively, the effects of ACO, control causality orientation and impersonal causality orientation in the relationships among psychological availability employee engagement and AP.

Besides, due to the cross-sectional nature of this study, it will be difficult to conclude a cause-and-effect relationship among the variables studied. There is also the difficulty of establishing trends due to the inability of cross-sectional studies to lend themselves to the analysis of behaviour over time. Future studies can explore the relationship with longitudinal design to establish trends.

Additionally, nurses were treated as a homogeneous unit of analysis, despite potential differences in nurse type, educational background, and professional experience that could influence the results. Future research could explore these relationships using a multi-level framework to account for such variations.

Finally, although performance literature recognises, contextual performance, job performance and counterproductive performance as other forms of performance, this study did not explore how psychological availability, employee engagement and ACO might impact these performance types. Future studies could focus on exploring the associations between psychological availability, employee engagement ACO and these types of performance.

6 CONCLUSIONS

Generally, employees' positive feelings about the work environment promoted their abilities to respond favourably to variations in their work situations. That is, the nurses to a large extent could manage stress, work in uncomfortable situations and make quick decisions when there are changes in their work circumstances due to confidence in their abilities and the belief that they possess the bodily, mental and emotive capacities to cope with challenging circumstances. Furthermore, the nurses' vigour, dedication and absorption towards their work enhanced their abilities to adapt favourably at work.

Essentially, because individuals exhibit different behaviours based on differences in their characteristics, the relationships between the nurses' feelings about their jobs, employee engagement and their ability to respond positively to changes in work situations (AP), depended on their levels of interest in their jobs, the extent to which they seek and pursue their self-interest and how they viewed poor performance (ACO).

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