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The Impact of Mental Health on Employee Productivity: Mediating Roles of Job Engagement and Cognitive Functioning

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Abstract

This study investigates the impact of mental health on employee productivity, focusing on the mediating roles of job engagement and cognitive functioning. It aims to clarify how psychological and cognitive resources work together to convert mental health into increased productivity at work. A quantitative research design was employed with 324 employees in 10 manufacturing companies in Dhaka, Bangladesh. The proposed direct, indirect, and sequential effects were tested using SPSS v27 and bootstrapped mediation analysis with Structural Equation Modeling (SEM) using AMOS v24. The findings indicate that mental health has a significant positive direct effect on employee productivity ($\beta = 0.244$, $p = 0.007$) and significantly influences job engagement ($\beta = 0.741$, $p < 0.001$) and cognitive functioning ($\beta = 0.362$, $p < 0.001$). While the indirect effect on productivity through job engagement alone was positive but not statistically significant ($\beta = 0.097$, $p = 0.207$), cognitive functioning significantly mediated this relationship ($\beta = 0.073$, $p = 0.037$). Moreover, a significant sequential mediation pathway was observed (MH → JE → CF → EP; $\beta = 0.068$, $p = 0.039$), demonstrating that job engagement enhances cognitive functioning, which subsequently improves productivity. In order to establish a cohesive framework that links affective and cognitive dynamics, this study combines the ideas of the Job Demands–Resources (JD-R) and the Conservation of Resources (COR). To our knowledge, this is among the few empirical studies from a developing-country context to examine both dual and sequential mediation effects in this relationship.

KEYWORDS

mental health; employee productivity; job engagement; cognitive functioning.

Introduction

In the current dynamic and competitive organizational environment, sustaining high employee productivity levels has emerged as a crucial objective for organizations looking to expand and remain sustainable. There are several organizational and personal elements that affect productivity, but employee mental health has received far more attention recently, particularly in the wake of global health crises, growing digitization, and changing work demands (Kniffin et al., 2021). Mental health encompasses an individual's emotional, psychological, and social well-being, which has a significant impact on their thoughts, feelings, and behaviors. It is not merely the absence of mental illness (World Health Organization, 2022). Decision-making, stress tolerance, interpersonal connections, and, eventually, job effectiveness are all impacted (Avey et al., 2010). The linkage between mental health and employee productivity has gained growing recognition in contemporary organizational psychology literature, where mental

wellness is viewed as a key component of maintaining worker productivity (Quick & Henderson, 2016).

According to WHO (2018), mental health is a state of well-being in which an individual can cope with everyday stresses, work productively, and contribute to their community

Nonetheless, workers around the world are experiencing higher levels of anxiety, depression, and burnout as a result of growing job complexity, longer workdays, a lack of work-life balance, and organizational unpredictability (Dyrbye et al., 2020). Given the widespread reports of heightened burnout, stress, despair, and emotional tiredness, the COVID-19 pandemic has further heightened worries about mental health in the workplace (Kniffin et al., 2021). The circumstance has brought attention to the necessity for empirical studies that examine the processes by which employee productivity and other work-related outcomes are influenced by mental health. A more complex view of the correlation between mental health and employment outcomes can be gained by comprehending the mediating role of behavioral and cognitive elements, such as cognitive functioning and job engagement (Plessis & Blignaut, 2020). Globally, HR departments are making significant investments in mental wellness programs, but because of a lack of knowledge about the underlying mechanisms, the return on investment is still unknown (Attridge, 2009).

Schaufeli et al. (2002) describe job engagement as a positive psychological condition through which employees experience enthusiasm, strong commitment, and deep involvement in their work. This construct is increasingly acknowledged as an essential linking mechanism that connects employees' psychological dispositions with their overall performance outcomes. Prior research indicates that engaged employees tend to experience fewer occupational health problems and display higher levels of efficiency, satisfaction, and commitment to their organization Bakker & Demerouti (2008; Rich et al., 2010). Employees who are engaged are proactive, resilient, and focused on finding solutions (Saks, 2006; Xanthopoulou et al., 2009). Therefore, job engagement may be a behavioral channel through which mental health affects performance at work. Effective job performance requires cognitive functioning, which includes processing speed, the ability to memory retention, and attention (Diamond, 2013; Lezak et al., 2012).

Cognitive functioning, which encompasses mental skills including memory, attention, reasoning, and executive control, is another significant but little-studied characteristic in this setting (Lezak et al., 2012). These abilities are essential for sophisticated problem-solving, decision-making, and flexibility—skills that are becoming more and more necessary in the uncertain and unpredictable workplaces of today (Diamond, 2013). Cognitive performance is frequently hampered by mental health conditions, leading to decreased capacity for multitasking, poor focus, and delayed information processing (Goldberg et al., 2011; Snyder, 2013).

Despite growing recognition of the importance of mental health for workplace outcomes, existing research has largely examined its effects on productivity through isolated psychological or behavioral mechanisms. These variables are frequently isolated in previous research, ignoring the integrative impacts they may have (Demerouti et al., 2001; Schaufeli & Taris, 2014) often within Western organizational contexts (Bailey et al., 2017; Shrivastava et al., 2021). Consequently, limited empirical evidence explains how affective and cognitive processes jointly and sequentially transmit the effects of mental health on employee productivity, particularly in developing economies where workplace mental health systems remain underdeveloped (Khan et al., 2021; Patel et al., 2007). To address this gap, the present study proposes and empirically tests an integrated framework grounded in the Job Demands–Resources (JD–R) and Conservation of Resources (COR) theories, examining both parallel and sequential mediation mechanisms linking mental health to employee productivity in the Bangladeshi manufacturing sector.

Literature Review and Hypothesis Development

Job Demands–Resources (JD–R) Theory

Demerouti et al. (2001) developed the Job Demands–Resources (JD–R) theory, offers an integrative explanation of the ways in which workplace interact with employee outcomes like productivity, engagement, and mental health. According to the model, job characteristics can be classified into two broad categories: job demands and job resources. The term job demand describes organizational, social, mental, and physical components of work which call for consistent effort and link to psychological and physiological consequences such as burnout or emotional tiredness (Bakker & Demerouti, 2007). On the other hand, job resources are those organizational, social, psychological, or physical characteristics that support learning or personal development, lessen working pressures, and assist in reaching work goals (Bakker et al., 2014; Bakker & Bal, 2010; Schaufeli & Taris, 2014). The JD–R theory states that if there is a mismatch between high work demands and insufficient resources for the job, employee productivity could be negatively affected.

Conservation of Resources (COR) Theory

The Conservation of Resources (COR) theory was introduced by Dr. Stevan E. Hobfoll in 1989, conceptualizes stress as a reaction to actual or threatened loss of valued resources or a lack of resource gain following resource investment. Employees who are psychologically stretched have strained cognitive and emotional resources, which impairs their capacity for cognitive functioning and decision-making (Westman et al., 2004). On the other hand, having access to helpful resources initiates cycles of resource gain, in which the availability of resources at first makes it easier to accumulate more resources, improving well-being and productivity (Hobfoll et al., 2018). This claim is supported by empirical data, which demonstrates that workers who have access to flexible work schedules report less anxiety and increased workplace participation (Halbesleben, 2010). Over time, both engagement and performance are strengthened by this gain cycle.

Mental Health and Employee Productivity

In the literature on organizational psychology and human resource development (HRD), the connection between employee productivity and mental health has drawn more and more attention. According to a groundbreaking meta-analysis

by Dewa et al, (2014), workers with moderate to severe mental illness may see a 30% decrease in output: mental health problems cause significant productivity losses. In a Canadian longitudinal study of more than 6,000 workers, Wang et al, (2008) discovered that individuals with depression experienced 1.5 times as many days of work loss as those without the condition. Dimoff & Kelloway (2019) conducted a comprehensive intervention study in which they found that companies that provided mental health training saw increases in employee engagement, task performance, and morale. In a similar vein, Attridge (2009) highlighted that Employee Assistance Programs (EAPs) can increase productivity by more than 40% in mental wellness difficulties.

Bhui & others (2016) and Roy et al. (2025) observed that a lack of supervisor support and organizational inequality worsened mental health difficulties and decreased productivity among NHS employees in the UK. Particularly in high-stress industries like manufacturing, healthcare, and information technology, studies from China and India demonstrate comparable patterns in Asian contexts Xie et al. (2021). Employees with strong psychological wellness try to exhibit desire, persistent work engagement, and effective cognitive functioning, and they are also less likely to experience presenteeism or absenteeism. These results are aligned with those of several earlier researches (Dewa et al, 2014; Wang et al, 2008). Drawing upon the breadth of existing literature and theoretical foundations, the following hypothesis is formulated:

H1: Mental health has a positive and significant impact on employee productivity.

Mental Health and Job Engagement

Job engagement is "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2002)." Engagement is the opposite of burnout and is associated with increased performance, organizational commitment, and proactive behavior (Bakker & Demerouti, 2008). More vigor, excitement, and commitment to their work are displayed by engaged workers (Rich et al., 2010). There is a high correlation within job engagement and innovation (Salanova & Schaufeli, 2008), discretionary effort (Saks, 2006), and job performance (Christian et al., 2011; Xanthopoulou et al., 2009). Employees can sustain resilience and work attention by using mental health as a personal resource (Hobfoll, 1989). Employee engagement measures increased by 22% in firms that invested in mental health programs, according to a cross-national study by Attridge (2009). Similar results were found by Dimoff & Kelloway (2019), who reported that team engagement improved significantly when leaders were trained to provide mental health support. Studying Chinese businesses, Qin et al. (2022) discovered that mental health has direct impact on job engagement, which then has an influence on work outcomes and innovative behavior. In a rigorous meta-analysis of 186 research (Nahrgang et al., 2011) showed a considerable negative relationship between job engagement and psychological strain (anxiety, exhaustion) ($r = -0.35$). A further meta-analysis by (Halbesleben, 2010) found that one of the best indicators of disengagement was emotional tiredness, which also had an impact on turnover intentions. Despite external constraints, employee engagement levels are higher when they believe that the company prioritizes mental health (Kaiser et al., 2020). Considering the existing theoretical and empirical literature, the following hypothesis is put forward:

H2: Mental health has a positive and significant effect on job engagement.

Mental Health and Cognitive Functioning

Mental health encompasses an individual's emotional, psychological, and social well-being, all of which influence their thoughts, feelings, and behaviors (Danna & Griffin, 1999). On the other hand, attention, memory, reasoning, executive functioning, language comprehension, and problem-solving are all parts of cognitive functioning (Lezak et al., 2012). People who have good cognitive functioning are able to multitask, comprehend complicated information, stay focused, and make wise decisions—all of which are essential in today's organizational settings (Salthouse, 2010). It is well established that depression, anxiety, and long-term stress affect executive functioning, memory, attention, and processing speed (Rock et al., 2014). Individuals with high anxiety have trouble controlling their attention and episodic memory, especially when performing demanding activities (Snyder, 2013). Poor mental health-related cognitive deficits can lead to mistakes, delayed decision-making, and a reduced ability to learn (Schmitt et al., 2014). The following hypothesis is proposed in light of the theoretical foundations and the reviewed body of literature:

H3: Mental health has a significant positive effect on cognitive functioning

Job Engagement and Employee Productivity

Job engagement is the process through which employees integrate their emotional, cognitive, and physical capacities into performing their work roles. The most widely accepted conceptualization of job engagement was developed by Schaufeli et al. (2002), who characterize it as a positive, satisfying condition associated with work that is marked by vigor, devotion, and absorption. Higher performance outcomes are frequently the result of engaged individuals' greater energy, mental toughness, and emotional investment in their work (Bakker & Demerouti, 2008; Christian et al., 2011). Recent studies frequently indicate that employee outcomes like organizational commitment (Rich et al., 2010), inventive behavior (Hakanen et al., 2008), and discretionary effort (Saks, 2006) are significantly predicted by job engagement. Engagement has emerged as a crucial precondition for maintaining employee productivity in modern organizational environments characterized by fast change and high demands (Bakker et al., 2011). It includes unproductive work practices, contextual performance, and task performance (Campbell, 1990). Both organizational competitiveness and the health of the national economy depend on productivity (Taris & Schaufeli, 2015). According to Schaufeli & Salanova (2007), factors that impact productivity include mental health, motivation, cognitive functioning, job design, and—most importantly—engagement. According to research, a number of

mediators and moderators might affect the relationship between involvement and productivity. For instance, it was demonstrated by Breevaart et al. (2014), Roy & Islam (2025), and Roy et al. (2024) that transformational leadership increases engagement, which in turn increases productivity. By analyzing the existing literature, we can propose the following hypothesis.

H4: Job engagement has a positive and significant impact on employee productivity.

Cognitive Functioning and Employee Productivity

Cognitive functioning is becoming more widely acknowledged as a key individual-level component that supports resilience, creativity, and job efficiency in the context of organizational performance (Bailey et al., 2017). Employees with higher cognitive abilities are better equipped to handle their workload, make sound decisions, and accurately interpret job expectations (Schmitt et al., 2014). Numerous contextual and personal elements, including motivation, skills, mental health, and cognitive capacity, affect productivity (Bakker & Demerouti, 2007; Sonnentag, 2018). Cognitive capacity has a favorable correlation with training implementation and learning outcomes, both of which increase long-term productivity (Colquitt et al., 2000; Klingberg, 2010; Tang et al., 2015). More engagement, creativity, and productivity are reported by workers who have access to cognitively helpful surroundings (Bailey et al., 2017). Employees are more likely to work productively and effectively if they have better executive function, memory, and attention (Conway et al., 2003). Drawing on both theoretical frameworks and empirical findings, the following hypothesis is formulated:

H5: Cognitive functioning has a significant positive effect on employee productivity.

Mental Health, Job Engagement, and Employee Productivity

A growing body of research recognizes the pivotal role of mental health in shaping both employee engagement and productivity (Ford et al., 2011; Robbins et al., 2012). These findings are further supported by the study conducted Cao et al. (2022), who showed that mental well-being enhances psychological capital, and then promotes employment productivity. Multiple meta-analyses indicate that engagement mediates the relationship between individual resources and performance outcomes (Christian et al., 2011). For instance, Ozturk et al. (2021) found that, within the hospitality sector, employee engagement significantly mediates the relationship between servant leadership, mental health, and both job satisfaction and performance. Enhanced engagement subsequently contributes to higher employee productivity (EP) by fostering perseverance, creativity, and discretionary effort (Rich et al., 2010; Van Zyl et al., 2021). Therefore, the path MH → JE → EP—which emphasizes engagement as the motivating conduit via which mental well-being drives performance—has strong theoretical and empirical support. Therefore, drawing on the reviewed literature, the following hypothesis is formulated:

H6: Job engagement acts as a mediating variable linking mental health to employee productivity.

Mental Health, Cognitive Functioning, and Employee Productivity

According to the second mediation channel, mental health improves cognitive functioning, which in turn increases productivity. This approach is based on the convergence of cognitive neuroscience and organizational psychology, which together demonstrate how mental health has a significant impact on retention, concentration, reasoning, and capacity to resolve problems (Kircanski et al., 2012; (Xie et al., 2021). Cognitive impairments, such as trouble focusing, slower information processing, and decreased decision-making accuracy (Ford et al., 2011). On the other hand, good mental health promotes creativity and cognitive clarity (Van Gordon et al., 2014). Fredrickson (1998) broaden-and-build theory of positive emotions provides a robust theoretical framework for understanding this relationship. The theory posits that positive emotions broaden individuals' thought–action repertoires, allowing for more adaptable and creative cognitive processing. Job is performance favorably connected with mental health, particularly when workers are content with mentally challenging tasks. Additionally, Cao et al. (2022) realized that social and mental wealth, two cognitively loaded notions, mediate the relationship between mental health and job satisfaction. Similarly, Xie et al. (2021) found that mental wellness greatly improves cognitive functioning, which raises task performance. While Westman et al. (2004) demonstrated that recovery from stress replenishes cognitive resources that enhance efficiency that lead to accurate performance outcomes. In this way, the MH → CF → EP pathway operationalizes the cognitive channel that converts mental health into quantifiable increases in productivity. In light of the above discussion, the following hypothesis is proposed.

H7: Cognitive functioning mediates the relationship between mental health and productivity.

Mental Health, Job Engagement, Cognitive Functioning, and Employee Productivity

The third pathway combines the cognitive and motivational processes into a single sequential mediation paradigm (MH → JE → CF → EP). According to this idea, mental wellness first encourages work engagement, which then improves cognitive functioning and raises productivity. Since employees with sound mental health are more likely to experience positive emotions and motivation at work, the sequence starts with mental health-promoting engagement Bakker & Demerouti (2017; Dimoff & Kelloway, 2019). Engagement has been associated with superior cognitive performance, as employees who are highly engaged demonstrate greater focus, attentiveness, and creative thinking abilities (Burić & Macuka, 2018). Mentally sound employees devote psychological energy to engagement in this "gain spiral" process (Hobfoll, 2001),which subsequently promotes sustained attention and cognitive sharpening—two crucial aspects of productivity.

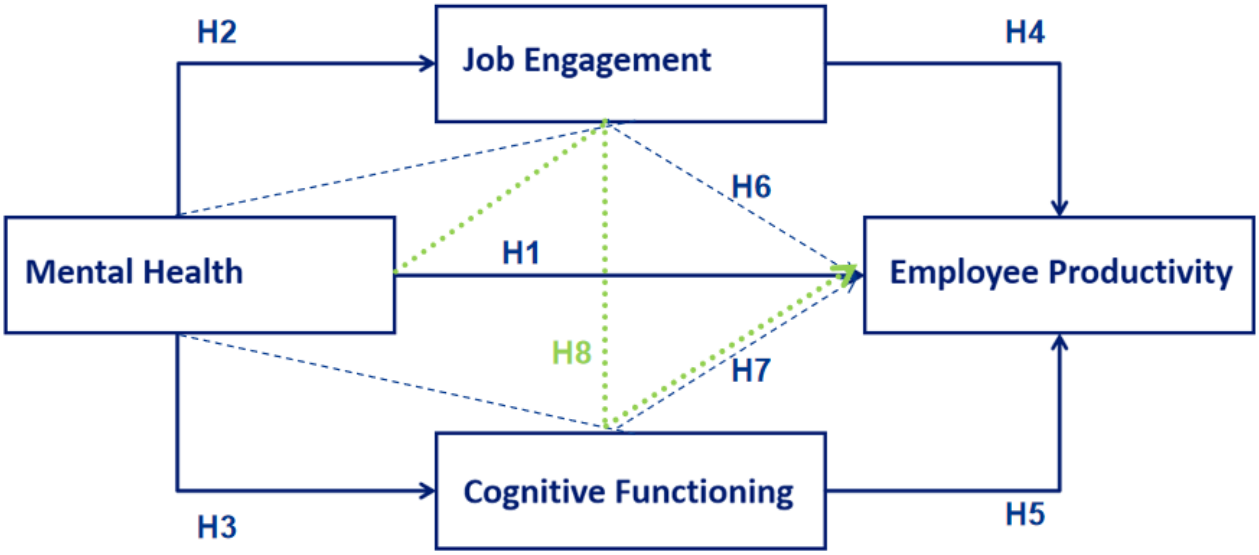

Figure 1. Conceptual Framework

Source(s): Author's Own Work

Table 1. Demographic characteristics of respondents (N = 324

Characteristics	No. of responses	(%)
Age		
18-25	103	32
26-35	159	49
36-45	44	14
More than 45	18	5
Gender		
Male	233	72
Female	91	28
Marital Status		
Married	152	47
Not Married	172	53
Education		
Bachelors	141	44
Masters	147	45
Doctorate	7	2
Others	29	9
Experience		
Less than 1 years	95	29
1-3 years	123	38
4-5 years	71	22
More than 5 years	35	11

Source(s): Author's Own

Mindfulness-oriented mental health therapies enhanced performance results by increasing engagement and cognitive clarity. In a similar vein, Schaufeli & Bakker (2004) verified that engagement improves task attention, connecting mental resources with cognitive output. The interconnectedness of these three mediation processes is highly supported by the combined evidence from management and psychology literature. Bakker & Demerouti (2017), Ford et al. (2011), and Cao et al. (2022) all support this integrated approach by highlighting how employees' psychological and cognitive resources work together to promote sustained high performance. Figure 1 illustrates the conceptual model of our research. Drawing on the preceding analysis, the following hypothesis is proposed:

H8: Job engagement and cognitive functioning jointly mediate the relationship between mental health and productivity.

Methods

Sample and Data Collection

This study used a quantitative, cross-sectional research approach to investigate the relationships among variables. Data were collected from full-time employees working in 10 large manufacturing organizations in Dhaka, Bangladesh. The manufacturing industry was chosen as a suitable environment for analyzing workplace mental health and productivity dynamics because of its high job demands, strict production targets, and increased exposure to psychological strain. Due to access issues that are often present in organizational research conducted in poor nations, a convenience sample approach was used. Employees who were accessible and willing to participate at certain times were given access by human resource departments, which made data collecting easier. A thorough translation and back-translation process was used to guarantee linguistic equivalency since the original measuring scales were written in English. To maintain conceptual accuracy, arguments were discussed and settled by consensus. A total of 350 questionnaires were distributed, of which 324 usable responses were returned, yielding a response rate of 92.6%. Convenience sampling may restrict statistical generalizability, but including workers from multiple establishments increases sample heterogeneity and strengthens the results' contextual representativeness.

The 324 respondents in our study varied in age, gender, marital status, education level, and work experience (see Table 1). The majority of the respondents are male (N = 233, 72%), aged 26-35 years (N= 159, 49%), not married (N = 152, 53%), educated at masters level (N = 147, 45%) and have work experience of 1-3 years (N = 123, 38%).

We employed well-established measurement items that had been created and employed in earlier empirical research to ensure validity and reliability of this study. Each construct was measured using multiple items on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). After being created in English, the questionnaire's items were translated into Bangla. We used a self-administrated questionnaire adapted from previous studies.

Employee mental health was assessed using seven items adapted from the General Health Questionnaire (GHQ-12), which assesses psychological well-being and distress developed by Goldberg & Williams (1988) and then supported by subsequent studies (Quick & Henderson, 2016). This scale has been widely validated in occupational and organizational settings, with Cronbach's alpha values ranging from 0.82 to 0.89 (Kashyap & Singh, 2017). Six questions from the Utrecht Work Engagement Scale (UWES-9), capturing the core dimensions of vigor, dedication, and absorption, created by Schaufeli et al. (2006), were used to measure job engagement. According to Bakker & Demerouti (2008), the UWES scale has shown Cronbach's alpha values between 0.85 and 0.92, making it one of the most valid and reliable measures of involvement. Cognitive performance was assessed using six modified questions from the Cognitive Failures Questionnaire (CFQ), consisting of nine items measuring lapses in attention, memory, and executive functioning, which was developed by Broadbent et al. (1982), then used in workplace cognition studies (Kircanski et al., 2012; (Xie et al., 2021). Research examining mental and cognitive performance has shown that this measure has strong reliability (α = 0.84–0.90). Employee productivity was assessed using seven items adapted from the Individual Work Performance Questionnaire (IWPQ) developed by Koopmans et al. (2014). Previous research has shown that the measure has strong dependability, with Cronbach's alpha values ranging from 0.86 to 0.91 (Koopmans et al., 2014). In order to prevent other explanations for the association between the research variables, adjustments were made for employees' age, gender, education, work experience, and marital status.

Common method bias control

Since the data were cross-sectional and self-reported, a number of statistical and procedural strategies were used to reduce common method bias (CMB). The assessment of predictor and criterion variables was psychologically segregated inside the survey, and the questionnaire questions were carefully crafted to reduce ambiguity. Harman's single-factor test was performed statistically, and the findings (48.31% of the total variance) showed that no single factor accounted for the majority of the variance, suggesting that common method bias was not a serious concern.

Data Analysis

In addition to employing descriptive analysis and relevant inferential statistical methods, this study proceeds through multiple phases, including measurement model assessment, structural model assessment, and mediating analysis. Preliminary analysis was done with the intention of modifying data to satisfy the fundamental premise of structural equation modeling (Ahmad, Islam, Sadiq, et al., 2021; Ahmad, Islam, Sohal, et al., 2021). This involved examining the data through frequency analyses to identify missing values, applying the Mahalanobis test to detect and remove outliers, and conducting normality and multicollinearity assessments. Then, descriptive analysis was used to determine the study's variables' mean, standard deviation, and correlation coefficient. After that, confirmatory factor analysis was conducted to examine the relationships between observed indicators and latent constructs, utilizing measurement models as outlined by Brown (2006). Finally, the study used a bootstrapping approach with a 95% confidence level to examine hypotheses.

Result and Discussion

Measurement model assessment

Prior to testing the hypothesized structural relationships, the measurement model was evaluated to assess reliability, convergent validity, and discriminant validity using Confirmatory Factor Analysis (CFA). Reliability and validity test were carried out in order to ensure accuracy, consistency, and statistical soundness of the measurement tools. The reliability of our measurement model is indicated by the fact that both Cronbach's alpha and composite reliability scores are greater than the criterion of 0.70 (Hair et al., 2019). As shown in Table 2, all factor loadings and Average Variance Extracted (AVE) values exceeded 0.7 and 0.5, respectively, indicating satisfactory convergent validity (Fornell & Larcker, 1981). The results imply that the items used for each construct are trustworthy and reliably assess their intended notion. Regarding discriminant validity, the square root of each construct's AVE (displayed in italics along the diagonal) was greater than the correlations between constructs, providing clear evidence of discriminant validity (see Table 3). These results indicate that the measurement model demonstrates satisfactory psychometric properties and is suitable for subsequent structural analysis.

Table 2. Convergent validity and reliability

Construct	Item	Loading	CR	AVE	Cα
Mental Health (MH)	MH1	0.836	0.93	0.64	0.93
	MH2	0.873			
	MH3	0.796			
	MH4	0.783			
	MH5	0.764			
	MH6	0.819			
	MH7	0.724			
Job Engagement (JE)	JE1	0.842	0.92	0.65	0.92
	JE2	0.806			
	JE3	0.752			
	JE4	0.819			
	JE5	0.811			
	JE6	0.800			
Cognitive Functioning (CF)	CF1	0.820	0.93	0.70	0.93
	CF2	0.813			
	CF3	0.846			
	CF4	0.799			
	CF5	0.854			
	CF6	0.876			
Employee Productivity (EP)	EP1	0.804	0.92	0.62	0.92
	EP2	0.819			
	EP3	0.795			
	EP4	0.788			
	EP5	0.720			
	EP6	0.783			
	EP7	0.812			

Note(s). CR: Composite Reliability; AVE: Average Variance Extracted; Cα: Cronbach's Alpha
Source(s): Author's Own Work

Table 3. Discriminant validity

	JE	MH	CF	EP
JE	0.805			
MH	0.759	0.801		
CF	0.761	0.739	0.835	
EP	0.483	0.509	0.494	0.789

Note(s). JE: Job Engagement; MH: Mental Health; CF: Cognitive Functioning; EP: Employee Productivity.
Source(s): Author's Own Work

Table 4. Descriptive statistics

Variables	Mean	SD	1	2	3	4
1. Mental Health	3.70	1.01	1			
2. Job Engagement	3.65	1.00	.685**	1		
3. Cognitive Functioning	3.68	1.00	.674**	.703**	1	
4. Employee Productivity	3.54	1.02	.499**	.475**	.454**	1

Note(s): All correlations are significant at $p < 0.001$.
Source(s): Author's Own Work

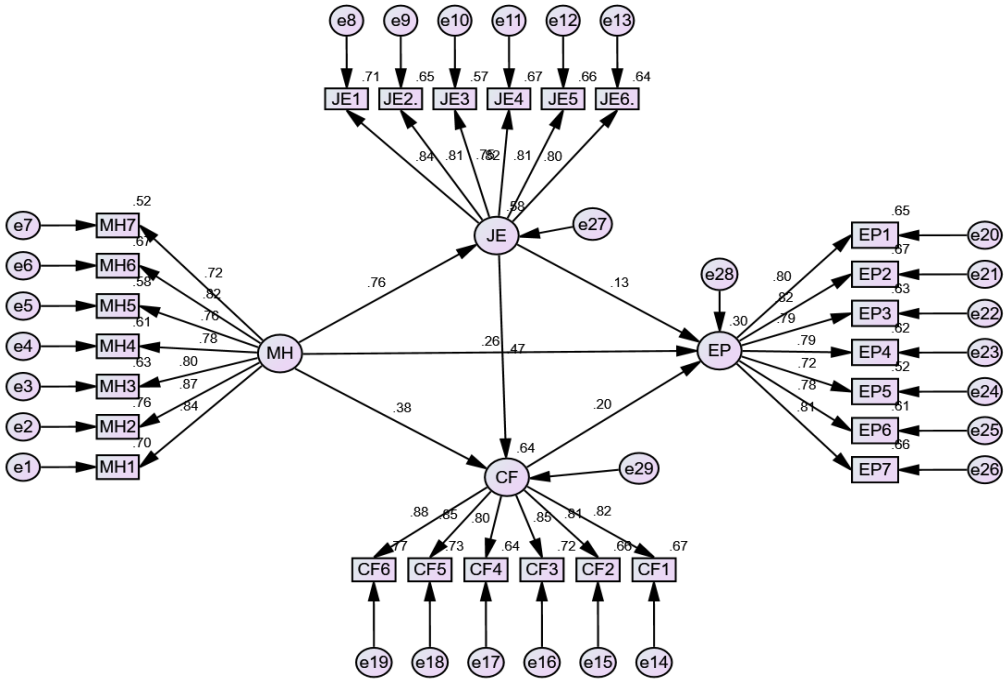

Figure 2. Results of the structural model assessment

Source(s): Author's Own Work

The findings of the descriptive analysis are shown in Table 4. All mean values are above 3.50-4.00, indicating that respondents generally reported good levels of productivity, job engagement, mental health, and cognitive functioning. Standard deviations (1.00-1.10) show moderate response variability, indicating participant judgments that are consistent. Strong and favorable correlations between all important factors are also shown by the results. Results imply that employees with better mental health typically show higher levels of engagement, enhanced cognitive function, and increased productivity, and they offer early evidence for the proposed links. Prior empirical studies (Bakker & Bal, 2010; Cao et al., 2022; Kim, 2019; Van Gordon et al., 2014) that highlight how psychological well-being improves motivation, cognitive clarity, and work performance are consistent with the intensity and direction of these correlations. This study provides empirical support, and strengthen their contribution.

A Confirmatory Factor Analysis (CFA) was conducted to validate the measurement model and ensure the psychometric soundness of the constructs employed in this study. The measurement model exhibited an acceptable fit to the data, with $\chi^2/df = 2.14$, Comparative Fit Index (CFI) = 0.95, Tucker-Lewis Index (TLI) = 0.94, Goodness-of-Fit Index (GFI) = 0.87 (marginal fit as suggested by Baumgartner & Homburg, 1996), Standardized RMR = 0.0401, and Root Mean Square Error of Approximation (RMSEA) = 0.059, which are within the acceptable thresholds outlined by Hair et al. (2019) and Hu & Bentler (1999). These results provide strong empirical support that each indicator effectively represents its underlying construct.

Structural Model Assessment and Hypothesis Testing

The assessment of the measurement model was followed by the structural model assessment for the path coefficient evaluation shown in Figure 2. Based on data from 324 respondents, the structural equation modeling (SEM) analysis in AMOS provided both direct and indirect path estimates, along with bias-corrected bootstrapped confidence intervals using 5,000 re samples. The analysis above illustrates the model's satisfactory fit indices and strong construct validity. The structural model's findings demonstrated a number of remarkable direct relationships that support the vital role that mental health plays in shaping employee outcomes. As presented in Table 5, the relationship between employee productivity (EP) and mental health (MH) was positive and statistically significant ($\beta = 0.244$, $p = 0.007$), thereby supporting Hypothesis 1 (H1). Furthermore, mental health significantly influenced job engagement (JE) ($\beta = 0.741$, $p < 0.001$) and cognitive functioning (CF) ($\beta = 0.362$, $p < 0.001$), providing support for Hypotheses 2 (H2) and 3 (H3). These findings indicate that employees with strong psychological well-being are more likely to be emotionally engaged in their work and have better cognitive abilities like problem-solving and attention, both of which are necessary for long-term job performance. However, the path from job engagement (JE) to employee

productivity (EP) was not significant (β = 0.130, p = 0.179), indicating that Hypothesis 4 (H4) was not supported. It implies that in the absence of sufficient psychological and cognitive support, engagement may not directly result in quantifiable productivity outcomes, despite its motivational value. Conversely, employee productivity (EP) was significantly and positively influenced by cognitive functioning (β = 0.201, p = 0.033), providing support for Hypothesis 5 (H5). All things considered, the direct effect analysis shows that mental health is a fundamental factor that influences job engagement and cognitive function, both of which increase productivity.

The primary focus of this study was to examine the mediating effects of job engagement and cognitive functioning in the relationship. From the adaptation of Noor et al. (2025) The indirect and sequential effects were tested using bootstrapped mediation analysis with 5,000 resamples. Table 6 presents the mediation findings. The indirect effect of mental health on employee productivity through job engagement was positive but statistically insignificant (β = 0.097, p = 0.207, 95% CI [−0.054, 0.258]), indicating that H6 was not supported. Conversely, the relationship between employee productivity and mental health was strongly mediated by cognitive functioning (β = 0.073, p = 0.037, 95% CI [0.006, 0.159]), which supports H7. Additionally, H8 was supported by a strong sequential mediation effect (mental health → job engagement → cognitive functioning → employee productivity; β = 0.068, p = 0.039, 95% CI [0.004, 0.148]). This finding indicates that mental health promotes job engagement, which in turn boosts cognitive functioning and increases productivity. All things considered, the indirect effects show that cognitive functioning—either on its own or in collaboration with engagement—is a critical pathway by which mental health results in noticeable increases in productivity

Consistent with our expectations, the findings revealed that mental health exerts a significant positive effect on employee productivity. Furthermore, both job engagement and cognitive functioning were found to operate as important psychological mechanisms linking mental health to productivity outcomes, each demonstrating a mediating effect. The findings identified that job engagement and employee productivity have a non-significant direct relationship, indicating that in high-demand industrial settings, engagement may not always result in improved performance results. Engagement may not immediately increase productivity in cognitively challenging circumstances; instead, it may boost cognitive functioning. The study also identified a significant sequential mediation, whereby job engagement and cognitive functioning together transmitted the positive influence of mental health on employee productivity. The subsequent sections elaborate on the theoretical contributions and managerial implications arising from these findings.

Theoretical Contribution

This research makes numerous substantial theoretical contributions to the fields of occupational psychology, HR management, and organizational behavior. In particular, it strengthens the theoretical connection between COR theory and JD-R theory by showing empirically how job engagement along with cognitive functioning are important mediating mechanisms in this relationship. The results show that mentally healthy employees have better levels of job engagement, which translates into increased productivity, supporting the JD-R model's motivational pathway (Bakker & Bal, 2010). The interconnectedness between psychological well-being, cognitive processes, and job results is thus highlighted by this study by linking the JD-R and COR frameworks. This relationship has been conceptually proposed but rarely empirically validated in previous literature.

A central contribution of this study lies in empirically demonstrating a sequential psychological mechanism through which mental health influences productivity. Specifically, the results confirm a serial mediation pathway (mental health → job engagement → cognitive functioning → employee productivity). Although majority of earlier empirical research on mental health and engagement was carried out in Western settings, this study provides cross-cultural validation by proving that comparable psychological mechanisms are applicable in emerging nations.

Contextual Contribution

The study's context has significant theoretical significance. Bangladesh represents a developing economy where manufacturing remains labor-intensive, work demands are high, and formal workplace mental health systems are still emerging. The results imply that productivity gains in high-pressure industrial settings rely more on how motivational states enhance workers' cognitive performance under stressful circumstances than they do on motivational states alone. The boundary conditions of JD-R and COR theories are expanded by this contextual understanding, which also emphasizes the significance of cognitive resources in productivity-driven industries in rising nations.

Managerial Implications

The findings of the research are very applicable to company executives, HR directors, and legislators who want to improve worker productivity and well-being. First, the findings show how important it is for workplace mental health promotion activities. Organizations should give priority to psychological support systems like employee assistance programs (EAPs), stress management workshops, as well as private counseling services. To lessen burnout and psychological suffering, managers can also incorporate wellness programs, resilience-building exercises, and mindfulness training. These activities are supported by earlier research (Dimoff & Kelloway, 2019; Van Gordon et al., 2014), which emphasizes that leaders who actively promote employee mental health foster improved resource utilization and engagement.

Second, the findings of the work indicate that a crucial behavioral mechanism connecting productivity and mental health is job engagement. Therefore, managers should create positions and work environments that foster employee engagement through meaningful work design, autonomy, feedback, and appreciation.

Third, this study's use of cognitive functioning as a mediator offers new insights for managerial practice. Managers must establish work settings that promote employees' cognitive performance since problem-solving, creativity, and decision-making all depend on cognitive clarity and flexibility.

Fourth, the sequential mediation effect (MH → JE → CF → EP) emphasizes how crucial it is to treat cognitive and psychological needs together rather than separately. Organizations should incorporate frameworks for engagement and performance management with mental health policy. Additionally, managers can use these findings to produce resilient and adaptable workforces in emerging economies like Bangladesh. Finally, this study supports the premise that employee psychological well-being might be exploited as a tactical instrument to acquire an advantage over competitors.

Limitations and Future Directions

Although having insightful findings, this research involves a number of shortcomings that give possibilities or future inquiry. First, the research utilized a cross-sectional design, which restricts the capacity to make inferences about the causal relationships between productivity, job engagement, mental health, and

Table 5. Hypotheses analysis (direct effect)

Structural paths	β	Standard Error	CR	p-Values	Results
MH-EP	.244	.090	2.707	.007	H1 Supported
MH-JE	.741	.055	13.380	***	H2 Supported
MH-CF	.362	.065	5.522	***	H3 Supported
JE-EP	.130	.097	1.343	.179	H4 Not supported
CF-EP	.201	.095	2.129	.033	H5 Supported

Note(s): N = 324; β = beta coefficient; CR = Critical ratio; MH= Mental Health; JE= Job Engagement; CF= Cognitive Functioning and EP= Employee Productivity
Source(s): Author's Own Work

Table 6. Hypotheses analysis (indirect effect)

Structural paths	β	Standard Error	p-Valus	Bootstraps at 95%		Results
				LL CI	UL CI	
MH-JE-EP	.097	.079	.207	-.054	.258	H6 Not supported
MH-CF-EP	.073	.039	.037	.004	.158	H7 Supported
MH-JE-CF-EP	.068	.036	.039	.003	.146	H8 Supported

Note(s): N = 324; β = beta coefficient; Bias-corrected bootstrapped 95% confidence intervals; Bootstrap n = 5,000; CI = Confidence interval; MH= Mental Health; JE= Job Engagement; CF= Cognitive Functioning and EP= Employee Productivity
Source(s): Author's Own Work

cognitive functioning. To effectively capture the dynamic interactions between these variables, future research could employ experimental or longitudinal approaches.

The possibility of sample bias comes in second. A convenience sampling method was used to choose study participants from a small number of Bangladeshi manufacturing companies. This might not accurately reflect the wide range of manufacturing employees from different organizations or geographical areas. To improve the findings' generalizability to a larger manufacturing workforce, future studies should strive to employ more probabilistic sampling procedures. Third, the main outcome variable in the current study was only employee productivity. Furthermore, adding moderating factors like organizational support, workplace climate, or leadership style may give an enhanced comprehension of border conditions which influence the connections between mental well-being and employee productivity.

Fourth, these results may not be as applicable to other areas or sectors of the economy because this study concentrated on a particular organizational and cultural setting. To prove the model's universality, future research should replicate it in a variety of cultural contexts and professional domains, including banking, education, healthcare, and information technology.

Finally, investigating long-term interventions aimed at enhancing mental well-being, engagement, and cognitive activity could enhance the relevance in practice and theoretical depth of further study.

Conclusion

This study provides robust empirical evidence that employee mental health plays a critical role in enhancing productivity, both directly and indirectly. Drawing on the JD–R and COR frameworks, the findings reveal that mental health significantly improves job engagement and cognitive functioning, which together explain how psychological well-being is transformed into productive work outcomes. Notably, while job engagement alone did not directly predict productivity, cognitive functioning emerged as a key explanatory mechanism, highlighting the importance of

cognitive clarity, attention, and decision-making in high-demand work settings. The significant sequential mediation pathway further demonstrates that mentally healthy employees are more engaged, cognitively effective, and ultimately more productive. By integrating affective and cognitive processes within a single explanatory framework, this study advances theoretical understanding and offers context-specific evidence from a developing economy. Practically, the results underscore the need for organizations to move beyond surface-level engagement initiatives and invest strategically in workplace mental health and cognitively supportive environments to achieve sustainable productivity gains.

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