Abstract: Using the lens of positive organizational behavior, the current study sought to understand the relationship between psychological capital and job engagement of registered nurses in Pakistan’s healthcare industry. For a better understanding of the mechanism, positive emotions (PE) are introduced as a potential mediator between the link between psychological capital (PsyCap) and work engagement. Also, the moderating role of emotional intelligence is studied. A total of 370 registered nurses working in tertiary hospitals in Lahore participated in the survey. Using the convenience sampling technique, the data were collected through a standardized and structured questionnaire using a cross-sectional timeframe. Results revealed that PE partially mediated the connection between the PsyCap and work engagement. Moderation revealed a statistically significant moderation of EI between PsyCap and PE. Also, it was worth noting that mediating effect of positive emotions among psychological capital and work engagement was moderated by emotional intelligence at all three levels of moderation. Workplace interventions must be created and executed to boost registered nurses’ psychological capital and work engagement. The findings of this study have consequences for registered nurses, hospital administration, and the positive psychology literature. The results underlined the vital role of PsyCap, EI, and PE in developing work engagement among registered nurses.

Introduction

Besides the fact, that work engagement has garnered phenomenal acknowledgment from the academic communities, policymakers, and practitioners in the past few decades, the engagement survey reports from around the globe show alarming levels of employee disengagement (about fifty percent), which pinpoints contrast in theory and practice whereby, organizations are challenged to synthesize work engagement research into practice (Saks, 2017). In a similar vein, a substantiate amount of literature indicates nursing staffs’ work engagement to be a huge concern for healthcare management around the globe that does not only add to leading poor healthcare services with regards to patient care but also causes increased employee turnover and financial uncertainty in the sector (Vizzuso, 2015; Shahid & Aslam, 2018). This conundrum has called for further investigation at numerous organizations as well as scholarly levels to find out antecedents of poor work engagement and forms the basis for this paper.
The extant literature (Karatepe & Karadas, 2015; Paek et al., 2015a; Joo et al., 2016; You, 2016) suggests that organizations that may encourage employee work engagement are more likely to develop work cultures that support employee motivation and retention. One way to achieve work engagement is to appreciate employees' positive strengths that add value to their tasks (Lowe, 2012; Men & Yue, 2019). This is all more crucial for healthcare organizations, mainly hospitals, due to the increased responsibility on them as the healthcare outcomes have a greater impact on a larger stakeholder group including societies.

Work engagement refers to “a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption” (Schaufeli & Bakkar, 2004, p.295). As a result, engaged employees form a good emotional connection with their work, allowing them to efficiently handle high job expectations. Since individual-level positive psychology is considered to be significantly shaping peoples' work attitudes therefore, psychological capital, also referred to as PsyCap, is an important constituent of Positive Organization Behaviour (POB) and has received much popularity in this context (Chen, 2015).

To tackle the needs of today’s complex markets, POB provides guidelines to manage human resources (Kraaijenbrink et al., 2010). Luthans (2002b) explains POB as “the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed and effectively managed for performance improvement in today’s workplace” (p.59). Hence, POB underlines the inculcation of positive resources in the workplace that catalyze organizational performance through work engagement (Luthans, 2002a; Sweetman & Luthans, 2010). Psychological Capital (PsyCap), on the other hand, stems from the POB paradigm and places great emphasis on the utilization of psychological capabilities and positive human strengths for improved work performances and engagement.

Moreover, to improve work engagement, mechanistic management philosophies adopted by the traditional organizations of the industrial era have been replaced by contemporary firms that place greater emphasis on the effective management of human capital by developing positive PsyCap. Moreover, enterprises ranging from healthcare to finance, as well as retail, manufacturing, and nongovernmental organizations, are seeing positivity as a powerful tool for creating a win–win situation for both corporations and their employees (Shahid & Aslam, 2018). Therefore, this study tends to explore the relationship between PsyCap and the work engagement of healthcare workers in Pakistan.

Previous work on occupational health psychology reveals positive emotional states to be scant in the literature based on the evidence that studies with negative work-related outcomes outnumber positive work outcomes with a striking ratio of 15:1 (Diener et al., 2020). However, a shift in both, literature and practice has been noted where positive emotional states focusing on individuals' strengths (energy, involvement, and efficacy) and optimal performance have started to take the place of negative emotions such as employees’ shortcomings in terms of exhaustion, cynicism, and ineffectiveness (Maslach, Schaufeli & Leiter, 2001; Schaufeli & Bakker, 2004).

Individuals who have a positive attitude towards their tasks, according to the broaden-and-build theory (Fredrickson, 1998) are usually believers in reoccurrences of positive outcomes. This is because, they interpret their tasks with positivity and in return, experience Positive Emotions (PE), which subsequently broaden their cognitive patterns and positive behaviors, resulting in work engagement (Fredrickson et al., 2001, 2004; Raza et al., 2021).
The PsyCap holds such fundamental synergistic potential that helps people in mustering their resources, uplift their attitudes, and build confidence that results in work engagement (Miao et al., 2021). So, we urge PE to be a mediator in the relationship between PsyCap and work engagement in the current paper. In the same manner, emotional intelligence (EI) is seen as an important factor that potentially moderates the relationship between PsyCap and PE. This study envisages that by incorporating PE as a mediator and EI as a moderator, a better understanding can be made of the relationship between PsyCap and work engagement. PsyCap contributes to individuals’ positive emotions, intelligent use of emotions, and engagement. Therefore, the study aims to inspect the relationship between PsyCap, PE, EI, and work engagement.

**Study Background**

Pakistan’s healthcare sector has generally been more diverted towards cure instead of care. Subsequently, while the nation keeps on delivering an enormous number of specialists/doctors, the nursing workforce, to a great extent, has been disregarded. Despite the integral role of nurses in patient care, they are occasionally given the due consideration or acknowledgment they deserve, which has unavoidably prompted an extreme deficiency of nurses and paramedics in the country. Building human resource capability within the healthcare sector implies the capacity building of the healthcare support team such as paramedical staff. The absence of a well-defined policy on human resource development often poses a challenge for middle-level healthcare workers (nurses) in Pakistan. To deliver health care services, nurses play a fundamental role as they are part of major health professional groups and with that said, they impel the health of patients and their well-being (Duffield et al., 2011).

An environment supporting efficacious change for registered nurses, so they can practice and promote their work engagement, serves as a vital tool for the retention of registered nurses (Peterson et al. 2011; Laschinger, 2012). Personal resources (PsyCap) enable registered nurses to adjust to their professional work environment thus increasing their work engagement. Moreover, among registered nurses, PsyCap stands for personal power and has been demonstrated to be significantly related to improved job engagement and decreased quit intentions (Laschinger et al. 2012). It is essential to comprehend the personal resources related to registered nurses’ work engagement due to their much-reported relationship. Yet alone, PsyCap cannot serve the purpose to enhance work engagement. Therefore, this study incorporates PE as a mediator and EI as a moderator to better explain the mechanism between PsyCap and work engagement. On the same note, individuals high on EI better manage, utilize and regulate their emotions during task performance thus displaying more work engagement. Several pieces of research in the past (Mäkikangas et al., 2013; Luthans et al., 2008; Rego & Fernandes 2005a; Fredrickson et al., 2003; Fredrickson, 2002) have investigated the same relationship but in a different setup. This study particularly incorporates PE and EI simultaneously as a mediator and moderator for the first time.

The findings of the current study reveal the current realities of human resources in the Pakistani health sector. Not only does this study imply the management of hospitals to take concentrated measures in developing and managing their psychological capital (nurses) for better engagement but additionally adds to the positive psychology literature. Another benefit is that it allows management to regard psychological capital as a valuable resource that influences employees’ organizational attitudes (work engagement) in the process of recruitment and selection. Furthermore, an emphasis on PsyCap, PE, and EI during the recruitment process sends a message to potential candidates of the desired vitality of personal individualities at work. Finally, the study seeks to add to the
Psychological Capital and Work Engagement: A Mediated Moderation Model of Positive Emotions and Emotional Intelligence

Literature Review

Psychological Capital

According to Fitz-Enz (2000), human capital consists of four categories of capital, which are referred to together as PIES (Psychological Capital, Intellectual Capital, Emotional Capital, and Social Capital). The most important of all is the psychological capital since it addresses issues that are faced by humans working in any sort of organization. PsyCap can be explained as a pleasant state of mind displayed by a person at his stage of growth and development (Luthans et al., 2007).

Luthans et al. (2004) indicated four components of PsyCap namely resilience, optimism, self-efficacy, and hope, where self-efficacy was adopted from Bandura’s (1997) work. Self-efficacy describes an individual’s belief in their ability to carry out tasks. (Wong et al., 2023). The dimension of hope was adopted from Snyder’s work (1995), who described it as an individual’s self-motivation to achieve goals and objectives. An optimistic employee is constantly positive about the present and the future and works hard to assist the business in reaching both individual and corporate goals. The optimism component is the belief that unpleasant situations are caused by extraneous and situational factors, but happy events are the result of internal, long-lasting causes.

Psychological Capital – Work Engagement

Mäkikangas et al. (2013) reviewed various variables of personality and highlight significant gaps in the current knowledge pertaining to these variables. The majority of the empirical research was found not to be focusing on testing the combined effects of the new second-order variable of personality known as PsyCap on work engagement. Most of the previous studies established and tested relationships between individual variables of personality and work engagement. In research on European cabin attendants, Xanthopoulou et al. (2012) discovered a positive significant relationship between self-efficacy and work engagement. Likewise, another study on South African educational institutions by Barkhuizen et al. (2014), found optimism to be substantially associated with work engagement through employment resources. However, some studies have reported a positive relationship between PsyCap and work engagement but they are limited in number (De Waal & Pienaar, 2013).

The theory of conversion of resources (COR) gives direction concerning the impact of PsyCap, as shown through self-efficacy, optimism, hope, and resiliency on work engagement. Resources that are individually dependent tend to make groups of resources. These groups of resources would prompt inspiration regarding work engagement states (Peng & Chen, 2022). Findings were consistent with the broad and built theory of Fredrickson (2001), that the accessibility of a work environment that is resourceful, can pledge positive emotions in employees narrating personal resources. To summarize, those employees who have elevated levels of psychological capital will feel more vigorous, and devoted and will be absorbed in their work.

According to Luthans et al. (2007), employees with greater levels of PsyCap are better equipped to manage difficulties in their employment. They show the ability and confidence in the skills to complete their jobs effectively. Furthermore, such personnel has been seen to readily figure out new approaches to achieve their intended goals, as well as the capacity to develop other alternative ways if the previous techniques to get the task done do not work properly. Employees with high PsyCap are also found to be recovering from setbacks quickly and adapting to change easily (Zyberaj et al., 2022). Hence, when employees have higher levels of self-efficacy, optimism, hope, and resilience, it is most likely that they will be more vigorous and strongly engrossed in their work. Therefore, we conted:
**H1:** Psychological capital significantly relates to work engagement.

**Psychological Capital–Positive Emotions**

According to an American study, positive emotions are found to buffer the effect of the tragic incident of September 11, 2001. PE act as a dynamic force that derives the bounce-back impact of people with high resilience. In particular, it is stated that people with high resiliency are the ones, who experience the most positive emotions. Subsequently, it is assumed that a positive emotional state strengthens the state of resilience that helps quick recuperation and speedy emotional growth (Fredrickson et al., 2003).

Ouweneel et al. (2011) discovered a substantial influence of academic self-efficacy, hope, and optimism on positive emotions, but only after controlling baseline resources and involvement. A study conducted among the employees of a restaurant revealed that day-level self-efficacy and optimism are significantly related to everyday positive emotions. Additionally, scholars found that when the positive emotions of individuals were increased, a visible change was seen in the levels of resilience and hope as well (Cao et al., 2022; Fredrickson et al., 2008).

Avey (2008) conducted his study on a working adult sample to find out that the employees who perceived the elements of positivity namely optimism, self-efficacy, resiliency, and hope (PsyCap) were more probable to experience positive emotions during their job (Chen et al., 2022). In short, the composite PsyCap was found to be contributing towards the positive emotions of individuals. For example, if employees have greater levels of optimism along with self-efficacy, it means that they commonly possess positive expectations for achieving their work-related goals, which subsequently results in experiencing positive emotions (confidence). Hence in the case of adversity, they are found to fight back and recover soon from it by finding other ways to reach their goals. These employees are found to be experiencing hope, which is also a positive emotion. This viewpoint was also backed by Tugade and Fredrickson (2007), who proposed that employees with high levels of resilience feel more positive emotions even in difficult conditions. Therefore, it is hypothesized:

**H2:** Psychological capital significantly relates to positive emotions.

**Positive Emotions–Work Engagement**

Luthans et al., (2008) investigated the impact of positivity on employees which represents their levels of positive emotions on their relevant attitudes such as work engagement and cynicism. They found a significant relationship between positive emotions and work engagement among 132 working adults who belonged to U.S. organizations. Staw et al. (1986) discovered that those workers who reported more incessant levels of positive feelings tended to be more socially incorporated with the organization, in this way likely prompting increased engagement compared to others with positive emotions. According to the main premises of broad and built theory, the range of thoughts and actions that appear in the mind of individuals is broadened by their positive emotions. Moreover, these emotions lead to the growth of personal resources (Park et al., 2022), which are found to be long-lasting. Hence, the psychological resources that are developed by the individuals when they experience positive emotions, result in work engagement (Fredrickson, 2001). Based on the work of Fredrickson et al. (2003), we argue that positive emotions will lead to greater work engagement.

**H3:** Positive emotions have a significant relationship with work engagement

**H4:** The relationship between psychological capital and work engagement is mediated by positive emotions
Emotional Intelligence

Emotional Intelligence (EI) is derived from the notion that certain people can treat emotions better than others, due to their advantage of the cognitive processes. Conceptually, EI comprises people resorting to complex information processing systems about their emotions as well as the emotions of other people, thus using this thinking to shape their behavior and thought processes. The adaptive features of these skills are useful for everyone (Mayer et al., 2008). The EI concept has become the desired characteristic in the organizational context, quickly becoming a common success predictor following emotional intelligence theory which proposed that EI is the most important factor in describing workplace success (Michinov & Michinov, 2022).

Emotional Intelligence—Interactive Role

EI and its relationship with various employee attitudes and behavior have attracted substantial research attention during the past few decades (Barreiro & Treglown, 2020). Rego and Fernandes (2005a), define EI as having an understanding of one own emotion, possessing self-control in the face of criticism, encouraging oneself via the right use of emotions, regulating/managing emotions, and understanding the emotions of others. Malik and Masood (2015) studied the relationship between EI emotional intelligence and psychological capital. Their quantitative study included 301 individuals who were currently working in Portugal. A correlation test was used for analysis and the results revealed that motivating yourself by using emotions and self-control of emotions were significant factors that led to higher psychological capital among employees.

Moreover, Fredrickson (2004) reported that people with high emotional intelligence can completely escalate the benefits of positive emotions. To sum it up, investigating the broad-and-build hypothesis of positive emotions in relation to emotional intelligence provides great insights into understanding how people with high EI can effectively perceive, use and regulate their emotions thus efficiently functioning in the workplace contrary to those with low EI. Moreover, such people use their positive emotions as paths that direct them toward their growth and progress (Mustafa et al., 2023). A study conducted by Thor (2012) revealed that a subdimension of EI is to manage one’s emotions and is significantly related to work engagement via utilizing regression techniques on a sample of 5,187 process improvement experts. About 17.8% variation was shown by EI in predicting work engagement. Thus, emotional intelligence appears as a significant factor that could interact with psychological capital to affect positive emotions therefore, we propose our final hypotheses:

H5: Psychological capital and emotional intelligence have an interactive effect, such that for employees who have high (low) emotional intelligence, the relationship between psychological capital and positive emotions will be stronger (weaker).

H6: Emotional intelligence will moderate the mediating mechanism of positive emotions among psychological and work engagement.

Research Methodology

The current study used a deductive research approach. The study data was primarily obtained at a single moment in time, the temporal horizon was cross-sectional. Using quantitative research techniques, data has been collected by the study respondents via survey. The data collection tool was a self-administered questionnaire and researcher interference was minimal, i.e., the data has been collected in the natural environment of participants.

Procedure

Primary data were collected through a single source through a structured questionnaire, which was self-administered. The researchers delivered
questionnaires to participants personally to elicit honest replies. The anonymity of participants was made sure moreover, they were informed beforehand that the questionnaire included no right or wrong answers. Once the data were collected, it was only in access to the authors.

**Sample**

All registered nurses of the Pakistan Nursing Council working in public and private teaching hospitals are included in the target population from medicine, surgery, gynecology/obstetrics, mental health, emergency, and outpatient departments of the hospitals in Lahore in their morning and afternoon shifts. Convenience sampling was used for the sample collection for this study. The sample size was calculated using the formula of infinite population. The formula yielded a sample size of 385 respondents. Therefore, the planned sample consisted of 400 registered nurses. Due to sufficient availability of resources and time, a total of 400 samples were collected during the survey, 30 of the surveys, however, were eliminated owing to improper replies. As a result, the actual sample size was 370.

**Measures**

**Table 1**

*Measurement of Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Reference</th>
<th>Item</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Capital</td>
<td>(Luthans et al. 2007a)</td>
<td>24 items will measure 4 dimensions (Self-efficacy, hope, optimism and resiliency)</td>
<td>Psychological Capital Questionnaire (PCQ) Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree)</td>
</tr>
<tr>
<td>Positive Emotions</td>
<td>Watson, Clark and Tellegen’s (1988)</td>
<td>10 Items only related to positive emotions</td>
<td>Positive and Negative Affect Schedule (PANAS) Frequency Scale</td>
</tr>
<tr>
<td>Work Engagement</td>
<td>Schaufeli et al. (2006)</td>
<td>9-Items will measure 3 dimensions (dedication, vigor and absorption)</td>
<td>Seven-point frequency rating scale ranging from 0 ‘Never’ to 6 ‘Always’</td>
</tr>
<tr>
<td>Emotional Intelligence</td>
<td>Rego &amp; Fernandes (2005a)</td>
<td>17 items grouped into six factors</td>
<td>Emotional Intelligence Scale 7 Point Likert Scale</td>
</tr>
</tbody>
</table>
Results

Descriptive Analysis

Analyses of the data show that all the study variables have shown a decent reliability value which is enough to show the relationship between psychological capital, engagement, the mediating effect of positive emotions and the moderating effect of emotional intelligence (Table 2).

Table 2
Reliabilities, Means, Standard Deviations and Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>α</th>
<th>M</th>
<th>S.D</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Psychological Capital</td>
<td>0.927</td>
<td>4.69</td>
<td>0.94</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Positive Emotions</td>
<td>0.824</td>
<td>33.3</td>
<td>7.21</td>
<td>0.690**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Work Engagement</td>
<td>0.680</td>
<td>4.22</td>
<td>0.75</td>
<td>0.684**</td>
<td>0.771**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Emotional Intelligence</td>
<td>0.712</td>
<td>3.52</td>
<td>0.73</td>
<td>0.651**</td>
<td>0.523**</td>
<td>N/A</td>
<td>1</td>
</tr>
</tbody>
</table>

A Pearson correlation found that psychological capital, a personal resource, was significantly related with work engagement (r = 0.684, P < 0.01). These findings show that nurses with greater levels of psychological capital are more engaged in their employment. Moreover, psychological capital had a positive significant correlation with positive emotions among nurses (r = 0.690, P < 0.01). This means that when registered nurses are confident, hopeful, resilient and optimistic they tend to experience and show more positive emotions. Positive emotions were significantly related to work engagement of nurses (r = 0.771, P < 0.01). This means nurses who experience more positive emotions tend to have greater work engagement.

Mediation Analysis

By observing the results from (Table 3), it is found that psychological capital was a significant and positive predictor of positive emotion (coefficient a = 0.700, 95% CI [0.1207, 0.0044]), and in turn positive emotion was a statistically significant predictor of work engagement (coefficient b = 0.790, 95% CI [0.1108, 0.0125]). Thus, registered nurses with higher psychological capital experienced more positive emotions, and positive emotions were associated with higher work engagement scores. The total effect of psychological capital on work engagement was also positively significant (coefficient c = 0.701, 95% CI [0.1396, 0.1951]). While controlling for positive emotions, the direct effect of psychological capital on work engagement came out to be statistically significant (coefficient c’ = 0.548, 95% CI [0.1329, 0.1873]). A partial mediation effect of PE between PsyCap and WE are indicated through these results. Consequent analyzes showed positive indirect effect of the psychological capital on work engagement mediated through PE (indirect effect coefficient = 0.553; 95% CI (0.0045, 0.0009)). According to the findings, a psychological capital higher levels leads to a higher level of pleasant emotions, which leads to a better level of work engagement amongst the nurses. Hence, hypotheses 4 was supported (table 3).
Table 3
Mediation Analysis

<table>
<thead>
<tr>
<th></th>
<th>Path c</th>
<th>Path a</th>
<th>Path b</th>
<th>Path c'</th>
<th>Mediation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X → Y</td>
<td>X → M</td>
<td>M → Y</td>
<td>X → M</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Total Effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MODEL 1 (PSYCAP) → Y (WE) MEDIATED BY M (POSEMO)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0.701**</td>
<td>0.700**</td>
<td>0.790**</td>
<td>0.548**</td>
<td>0.553**</td>
</tr>
<tr>
<td>SE</td>
<td>0.033</td>
<td>0.031</td>
<td>0.026</td>
<td>0.042</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.615</td>
<td>0.640</td>
<td>0.741</td>
<td>0.780</td>
<td></td>
</tr>
<tr>
<td>p-Values</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>Confidence Intervals</td>
<td>.1396 to .1951</td>
<td>.1207 to .0044</td>
<td>.1108 to .0125</td>
<td>.1329 to .1873</td>
<td></td>
</tr>
</tbody>
</table>

**Moderation Analysis**

Results of PROCESS Macro Model 1 indicate that β value of interaction term Psychological Capital * Emotional Intelligence (β = .68, p < 0.01) and the graphical representation of facts validate the moderating role of emotional intelligence in psychological capital—positive emotions relationship. Also, zero falls between the lower and upper confidence intervals, suggesting the significance of moderation CI (0.8289 to 0.3151). On basis of these statistical reviews, H5 is supported, and it has been established that emotional intelligence moderates the link between psychological capital and positive emotions.

Table 4
Moderation Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>T</th>
<th>P</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant Psychological Capital</td>
<td>3.8231</td>
<td>0.0240</td>
<td>159.54</td>
<td>0.000</td>
<td>3.775</td>
<td>3.8703</td>
</tr>
<tr>
<td>Psychological Capital</td>
<td>0.6856**</td>
<td>0.0723</td>
<td>9.4853</td>
<td>0.000</td>
<td>0.5431</td>
<td>0.8282</td>
</tr>
<tr>
<td>Emotional Intelligence Interaction Term</td>
<td>0.4022**</td>
<td>0.0791</td>
<td>5.0840</td>
<td>0.000</td>
<td>0.2462</td>
<td>0.5582</td>
</tr>
<tr>
<td>Interaction Term</td>
<td>0.5720**</td>
<td>0.1303</td>
<td>4.3907</td>
<td>0.000</td>
<td>0.8289</td>
<td>0.3151</td>
</tr>
</tbody>
</table>

Model: F (3, 366) = 116.99, p<.001, R² = .64
**P< 0.01 (2-Tailed)
*P< 0.05 (2-Tailed)

Interaction Term: Psychological Capital*Emotional Intelligence

To investigate moderation further, the conditional effect of psychological capital on positive emotions was evaluated using a pick-a-point technique at three emotional intelligence levels (Hayes & Matthes, 2009): low EI (mean ± 1 SD), medium EI (mean), and high EI (mean + 1 SD). In all three levels of EI, psychological capital was shown to be strongly related to positive emotions (see Table 5).
At low level of moderation by emotional intelligence mediation path between psychological capital and work engagement is statistically significant since lower limit and upper limit of confidence interval does not include zero CI (.6510 to .9331). At high level of moderation by emotional intelligence mediation path between psychological capital and work engagement is also statistically significant since lower limit and upper limit of confidence interval does not include zero CI (.4005 to .7256). These results suggest that higher psychological capital is related with higher positive emotions. This link, however, may be influenced by EI; the greater the EI, the stronger the relationship, and vice versa. In order to better comprehend the moderation effect (see figure 1), a graphical depiction of the moderation effect is shown.

**Table 5**
Conditional effect of PsyCap on PE at low, medium, and high values of the EI as moderator

<table>
<thead>
<tr>
<th>Levels of EI</th>
<th>Boot Effect</th>
<th>Boot SE</th>
<th>Boot LLCI</th>
<th>Boot ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>.7920</td>
<td>.0715</td>
<td>.6510</td>
<td>.9331</td>
</tr>
<tr>
<td>High</td>
<td>.5632</td>
<td>.0825</td>
<td>.4005</td>
<td>.7259</td>
</tr>
</tbody>
</table>

**Moderated Mediation Analysis**

After the completion of mediation and moderation analysis, we studied moderated mediation model. Moreover, to help visualize the results figure 2 is presented as a diagram of the model. The fact that the mediation effect got larger as the EI level increased explains the conditional indirect impact. The indirect relationship between PsyCap and WE via positive emotion is being moderated by EI. As a result, we might propose that the ability to have psychological skills indirectly protects against having low levels of WE via its impact on PE. Having psychological capital appears to be particularly useful in enhancing WE in people with high EI. As EI increases this relationship increases.

**Table 6**
Conditional indirect effects of X on Y

**INDIRECT EFFECT:**
Psycap -> Positive Emotions -> Work Engagement

<table>
<thead>
<tr>
<th>Levels of EI</th>
<th>Boot Effect</th>
<th>Boot SE</th>
<th>Boot LLCI</th>
<th>Boot ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>.0070</td>
<td>.0044</td>
<td>.0002</td>
<td>.0173</td>
</tr>
<tr>
<td>High</td>
<td>.0041</td>
<td>.0047</td>
<td>.0006</td>
<td>.0171</td>
</tr>
</tbody>
</table>
The above analysis clearly indicates that mediating effect of positive emotions among psychological capital and work engagement is moderated by emotional intelligence at all three levels of moderation. Also, these findings can be supported by results in Table 7. The index of moderated mediation is significant as zero is not placed between lower limit and upper limit of confidence intervals $CI (0.0168$ to $0.0270)$. Hence, hypothesis 6 based on moderated mediation was supported.

**Table 7**

*Index of Moderated Mediation*

<table>
<thead>
<tr>
<th></th>
<th>Index</th>
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<tbody>
<tr>
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**Discussion**

Evidence amassed from all the earlier research support the proposed hypotheses of this study. PsyCap, which is composed of four personal strengths, hope, optimism, self-efficacy, and resilience, is considered a desirable personal asset in the human resource philosophy. The results of this study suggest that as a second-order core factor, PsyCap depicts a strong and significant relationship with several employee attitudes namely work engagement.

The study, conducted in the context of the healthcare sector, looked into work engagement as a possible result of psychological capital. Work engagement was discovered to be a possible outcome of psychological capital, as predicted. Conversion of resource theory (Hobfoll, 1989, 2001) and JD–R model (Bakker & Demerouti, 2008; Bakker & Leiter, 2010) explained the part of work engagement in this connection. These theories argued that those employees, who display increasing levels of self-efficacy, optimism, hope, and resiliency simultaneously, reflect increasing levels of work engagement. Previous research conceptually depicted the role of psychological capital as an important predictor of work engagement. However, this research has
Psychological Capital and Work Engagement: A Mediated Moderation Model of Positive Emotions and Emotional Intelligence

Empirically gauged the relationship between PsyCap and work engagement.

The study results proved to be in line with the prior studies of Avey et. al. (2011), pertaining to PsyCap that employee attitudes are influenced by PsyCap in a desirable way (Shahid & Aslam, 2018). Workers with stronger positive strengths are likely to achieve higher goals (hope), perceive self-capability to be personally successful (self-efficacy), believe in positivity in the workplace (optimism), and bounce back from adversity quickly (resilience) (Wong et al., 2023). While a probable elaborated relationship was created conceptually no empirical evidence was gathered by Sweetman and Luthans (2010) that revealed PsyCap to be directly linked with work engagement. Employees having high PsyCap were able to focus on their jobs better, because of higher motivation and resourcefulness; a quality that drove them to be more productive and fulfilled enabling them to carry out tasks with utmost dedication. High PsyCap means more qualities related to dedication, vigor, fulfillment, and absorption and less related to quitting and absenteeism thus enforcing optimistic values resulting in desirable organizational as well as personal outcomes and an ultimate fulfillment of goals.

The link between efficacy and work engagement was explored by Sweetman and Luthans (2010:59). Research has shown that elevated levels of efficacy are directly proportional to increasing energy levels and an employee’s efforts that are exhibited through completed tasks (Peng & Chen, 2022). It also results in an employee forgetting about time while being overly engaged in his/her work. As far as optimism in relation to work engagement is concerned, it substantially predicts the two significant constituents of work engagement i.e., dedication and adoption. The authors believed that optimism enhances work performance as employees feel in charge of their work situations. It can be deduced that optimism caters to positivity and ultimately increases work engagement.

Another key finding of this study lays down the significant linkage between PsyCap and PE. The broaden-and-built theory of positive emotions was used as the conceptual framework in this study to determine if PsyCap generates positive feelings that ultimately improve work engagement (Fredrickson, 2009; Fredrickson et al. 2008). PsyCap was found to have a positive impact in increasing PE that subsequently improved the work engagement of registered nurses, thus making them more vigorous, dedicated, and absorbed within their job-related tasks. Positive emotions were shown to partially mediate the relationship between psychological capital and work engagement, implying that individuals with greater personal resources may feel more pleasant emotions and as a result may have higher levels of work engagement. Results from this study are supported through past research on PsyCap and PE (Ouweneel et. al., 2011; Xerri et al., 2022). Fredrickson et. al. (2008) found that participants whose positive emotions were varying significantly foretold higher possession of resources such as more resiliency and hopefulness (pathway thinking). Such positive resources or assets that were developed through increased positive emotions fully acted as a process mechanism among PsyCap and work engagement.

The cognitive mediation theory of emotions answers our very first research question regarding the role of positive emotions as a mediator. The theory supports our empirically derived relationship in a workplace setting (Adler et al., 2022). This theory suggests that psychological beliefs, appraisals, and expectancies (e.g., hope, self-efficacy, resiliency, optimism, and PsyCap overall) held by an employee are the basis of positive emotions which are followed by several employee attitudinal outcomes and behaviors (e.g., work engagement). A reason that could explain this empirically significant relationship is that
PsyCap increases levels of positive emotions through several ways in which employees interpret events. For example, a similar event can be a source of stressful emotion for one employee but not for another. Employees can infer organizational events in different ways that the event could lead them to experience attitudes of disengagement (e.g., burnout). Most of the time employees are unconscious of the linkage between these thoughts and emotions (Lazarus, 1993). Instead, such events can be interpreted positively by employees though in such cases PsyCap will do the mechanism role. Tagade and Fredrickson (2004) found that resiliency as a cognitive state and ability is an antecedent to positive emotion, individuals who are highly resilient experience positive emotions even when faced with stressful situations. Individuals who possess such psychological capacities experience positive emotions in stressful situations even when their co-workers are stressed out. Fredrickson and Losada (2005) discovered that emotions that are positive caused lively progressions with downstream consequences for growth and flexibility. This study showed that in collaboration with PsyCap, a self-reinforcing upgoing flow of outcomes is created by emotions, which lead to higher levels of work engagement.

Hypothesis 5 reveals that for nurses, who stated higher emotional intelligence their path between PsyCap and PE was stronger. In contrast, for those who stated low emotional intelligence, the path between PsyCap and PE was weaker. According to the findings, nurses with high EI are better than those with poor EI in emotion perception, emotion used to enhance thinking, emotion comprehension, and emotion management. The path of PsyCap–PE is stronger for those with high EI, which suggests that their positive emotions can act as an upward spiral for development toward improved emotional well-being. It also helps them become a better version of themselves. It serves as a means instead of an end to a better life. In comparison to those whose path of PsyCap–PE is weaker due to low EI their negative emotions act a downward spiral to depression, exhaustion, burnout, and stress. Thus, those with high EI are better at experiencing, regulating, and managing negative emotions.

Earlier research has also predicted favorable effects pertaining to EI (e.g., Michinov & Michinov, 2022). (Mikolajczak et al., 2008) observe that the usage of adaptive strategies (e.g., a reappraisal of positive emotions) related to emotion regulation is promoted by EI and also helps in preventing maladaptive strategies (e.g., self-blame) related to emotion regulation. EI prevents the choice of such strategies in cases of fear, jealousy, anger, and stress. Evidence has been gathered that in stressful situations at work, unlike nurses with low EI, those with high EI are more likely to use coping mechanisms, which include coping with focusing on the task rather than coping with focusing on the emotions (Bastian et al., 2005).

To sum it up, by examining the PsyCap theory and EI in combination with the broaden-and-build theory of positive emotions valuable insights are extracted in reasoning as to why nurses with higher levels of psychological capital and EI effectively function well in their hospitals while others fall behind. These nurses have a composite understanding of their positive emotions and might know how to better use this knowledge resourcefully to combat any negative stimuli. It is likely to hold a belief that emotionally intelligent, optimistic, hopeful, self-efficacious, and resilient nurses’ positive emotions should be deliberately cultivated as avenues to development and growth, according to the broaden-and-build principle.

Limitations and Future Directions
Since the time frame used was cross-sectional causality among variables cannot be determined. Future studies should use a longitudinal time frame to examine the causal linkage among variables. As self-reported questionnaires are most frequently used for data collection, they could lead to response biases also the reliability...
and validity of the study might be affected. Another weakness of the study is the use of a limited sample of registered nurses; issues of generalization could take place since the results cannot be generalized for the whole population. Future research should incorporate a larger sample size in other medical settings as well, such as long-term health care and mental health care units.

**Practical Implications**

For those hospitals that are in quest for planning and introducing various efficacious tools to improve registered nurses’ positive attitudinal outcomes by building and managing their psychological capital, this study lays down some practical implications.

To begin with, it is important that hospital administration ought to perceive the prime significance of psychological capital and create training projects to help nurses develop and manage it at high states including methods for shielding themselves from the loss of such capital. Nurses can manage, safeguard and enhance their psychological capital effectually by gaining knowledge on how to increase their resources such as optimism, resiliency, hope, and self-efficacy. Individually and collectively, short training intercessions can strengthen these personal characteristics. Also, more elaborative advancement programs going from PsyCap to work engagement would be much more efficacious. Through such projects, nurses can figure out how to predict hindrances; avoid losses, and sustain optimum levels of psychological capital; resulting in increased levels of work engagement with their activity and working environment.

Evidence from theory and research indicates that employees' EI can be improved by several training techniques and coaching sessions such as 360-degree training. Managers should pay heed to improve emotional intelligence by deploying effective techniques of training and development. By doing so, success can be achieved by organizations in the long run.

**Conclusion**

Overall, the hypotheses augmented were supported through the results of the study underlining the fact that registered nurses who are optimistic, hopeful, self-confident, and resilient experience positive emotions and as a result are more dynamic, enthusiastic, and absorbed in their daily routine work. Another important finding of this study indicates the moderating effect of EI amongst psychological capital and positive emotions. Even though the observational research on psychological capital is as yet developing, managers of human resource departments and particularly those concerned with human resource development, can be sure that at any rate at this phase of the research, PsyCap has a solid and critical linkage with personnel attitudinal outcomes, particularly with work engagement. Even though research about PsyCap is moving in the right direction at the right pace, but still to achieve new heights in this field, and more efforts are required. Both theoretical and practical efforts need to be incorporated so that the aspirational and scientific goals relating to PsyCap can be achieved.

**References**


team psychological capital and work engagement. *Current Psychology.*


