

Examining the Impact of Employee Engagement on Talent Retention in the Egyptian Petroleum Sector Organizations. The Mediating Role of Job Embeddedness, and the Moderating Role of Perceived Organizational Support

دراسة تأثير مشاركة الموظفين على الاحتفاظ بالمواهب في مؤسسات قطاع البترول المصري: الدور الوسيط للتكامل الوظيفي والدور المعدّل لدعم المنظمة المدرك

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Abstract:

The current research explores the impact of employee engagement on talent retention in the Egyptian petroleum sector organizations with the mediating role of job embeddedness and the moderating role of perceived organizational support.

The study employed a quantitative research design, using a sample of 470 employees covering the sector with different types and representing as well different specialties. Data were gathered through a structured survey, and the collected data was analyzed using SPSS v20 software. A correlation analysis was conducted to explore the relationships between employee engagement, job embeddedness, perceived organizational support, and talent retention. The goals of this research were largely achieved. Of the five hypotheses investigated, four were fully supported and one was not supported. The first hypothesis confirmed a positive relationship between employee engagement and talent retention.

The second hypothesis confirmed a positive relationship between employee engagement and job embeddedness. The third hypothesis confirmed a positive relationship between job embeddedness and talent retention. while the fourth hypothesis regarding the moderating role of perceived organizational support on the relation between employee engagement and talent retention was

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rejected. The fifth hypothesis regarding the mediating role of job embeddedness on the relation between employee engagement and talent retention was confirmed.

These findings highlight the alert for the Egyptian petroleum sector organizations to develop strategic recommendations to enhance employee engagement, job embeddedness, and perceived organizational support, which may improve talent retention in the sector organizations. The study findings as well may contribute to the strength and sustainability of the Egyptian petroleum sector organizations through developing effective talent retention strategies, policies, and procedures, which may support at the end in retaining the talents within a highly competitive and dynamically changing business environment and may secure the skilled workforce for years to come.

Keywords: Talent Retention, Employee Engagement, Job Embeddedness, Perceived Organizational support.

ملخص:

تهدف هذه الدراسة الي قياس تأثير الالتزام الوظيفي على الاحتفاظ بالمواهب في منظمات قطاع البترول المصري، مع دراسة الدور الوسيط للتضمين الوظيفي والدور المعدل للدعم التنظيمي المدرك. استخدمت الدراسة تصميمًا بحثيًا كميًا، باستخدام عينة من 470 موظفًا يغطون أنواع مختلفة من القطاع ويمثلون تخصصات متنوعة. تم جمع البيانات من خلال مسح منظم وتحليلها باستخدام برنامج SPSS الإصدار 20. أجريت تحليلات الارتباط لاستكشاف العلاقات بين الالتزام الوظيفي والتضمين الوظيفي والدعم التنظيمي المدرك والاحتفاظ بالمواهب. تحققت أهداف البحث بشكل كبير. من بين الفرضيات الخمس التي تمت دراستها، تم دعم أربع فرضيات بالكامل وواحدة لم يتم دعمها:

- أكدت الفرضية الأولى وجود علاقة إيجابية بين الالتزام الوظيفي والاحتفاظ بالمواهب.
- أكدت الفرضية الثانية وجود علاقة إيجابية بين الالتزام الوظيفي والتضمين الوظيفي.
- أكدت الفرضية الثالثة وجود علاقة إيجابية بين التضمين الوظيفي والاحتفاظ بالمواهب.
- تم رفض الفرضية الرابعة المتعلقة بالدور المعدل للدعم التنظيمي المدرك على العلاقة بين الالتزام الوظيفي والاحتفاظ بالمواهب.
- تم تأكيد الفرضية الخامسة المتعلقة بالدور الوسيط للتضمين الوظيفي على العلاقة بين الالتزام الوظيفي والاحتفاظ بالمواهب.

الكلمات المفتاحية: المواهب، الالتزام، التضمين، الدعم.

Introduction

The Egyptian Petroleum Sector represents one of the most significant sectors as it plays an important role in contributing to the Egyptian economy, accounting for a substantial portion of export earnings. The rapidly evolving nature of the utilized technologies in petroleum industry demands the contribution of a very highly skilled and knowledgeable workforce committed to continuous learning and adaptation. The current business market environment has experienced the development of human capital that has become an important source of achievement and effectiveness (Rodrigues & Sousa, 2024). Trends such as globalization, and the accelerating rate of technological advancement make it vital for organizations to acquire and retain talents. As globalization increases, talents in the Egyptian petroleum sector organizations are more willing to relocate for better opportunities, increasing the challenge of retaining talents. The Gulf region and Europe in the oil & gas sector often offer competitive salaries, benefits, and working conditions that may be more appealing than the current opportunities in Egyptian oil & gas industry. Talent shortage is a reality in almost all sectors of activity, so one of the main organizational concerns is related to their ability to attract and retain qualified employees (Goncalves & Bruno, 2023). Organizational competitiveness could be impacted from losing their talents (David G. et al., 2010; Casio & Boudreau, 2016). With an increasing trends of losing talents within the Egyptian sector organizations, it is assumed that the Egyptian petroleum sector is facing real challenges nowadays. It is believed that talent retention is important for the sector's long-term success and sustainability.

Research Significance

The Egyptian petroleum sector is a critical sector that drives economic growth and development of the country. The sector is currently facing challenges related to the increasing trend of losing talent. The significance of the study lies in its potential to contribute to both theory and practice within the field of human resource management, particularly in the context of the Egyptian petroleum sector organizations. By exploring the relationships between employee engagement, job embeddedness, and perceived organizational support on talent retention, the study findings may contribute to the strength and sustainability of the Egyptian petroleum sector organizations through developing effective talent retention strategies, policies, and procedures that may secure the skilled workforce for years to come.

Research Problem

Despite the Egyptian petroleum sector's significant investment in talent development, there is a noticeable trend of talented individuals resigning to join foreign petroleum organizations worldwide. This raises the concern of talent retention and the need to investigate the relationships between employee engagement, job embeddedness, and perceived organizational support and talent retention to develop effective strategies towards a stronger workforce in the Egyptian petroleum sector organizations.

Research Gap

The current literature on employee engagement and talent retention focuses on other industries, such as technology, healthcare, and service-based organizations. Geographically, this is the first topic to focus on the impact of employee engagement on talent retention in the Egyptian petroleum sector organizations with the mediating role of job embeddedness and the moderating role of perceived organizational support. Examining these relations in the context of the Egyptian petroleum sector may fill the knowledge gap by identifying valuable insights and contribute to the broader understanding of how employee engagement, job embeddedness, and perceived organizational support influence talent retention in the Egyptian petroleum sector organizations, which may support at the end in retaining the talents within a highly competitive and dynamically changing business environment.

Research Questions:

The researcher is now able to synthesize the research problem in the following main research question:

- What is the impact of employee engagement on talent retention in the Egyptian petroleum sector organizations?

The sub-questions that could be raised under the main research question are as follows:

- To what extent does job embeddedness mediate the relationship between employee engagement and talent retention in the Egyptian petroleum sector organizations?
- How does perceived organizational support moderate the relationship between employee engagement and talent retention in the Egyptian petroleum sector organizations?
- What is the impact of employee engagement on job embeddedness in the Egyptian petroleum sector organizations?

- What is the impact of job embeddedness on talent retention in the Egyptian petroleum sector organizations?

The above questions are formulated into the following research hypotheses:

- H1: There is a positive relationship between employee engagement and talent retention.
- H2: There is a positive relationship between employee engagement and job embeddedness.
- H3: There is a positive relationship between job embeddedness and talent retention.
- H4: Perceived organizational support will moderate the relationship between employee engagement and talent retention.
- H5: Job embeddedness will mediate the relationship between employee engagement and talent retention.

Research Objective

This study aims to identify and analyze the impact of employee engagement on talent retention in the Egyptian petroleum sector organizations. The study as well shall investigate the mediating role of job embeddedness and the moderating role of perceived organizational support on talent retention in the Egyptian petroleum sector organizations. Specifically, the study aims to investigate the impact of these variables, which influence talents within the Egyptian petroleum sector to remain with their organizations despite the highly competitive nature of the petroleum industry worldwide. The study may offer support by providing recommendations for improving talent retention strategies and policies within the sector with the aim of achieving a stronger workforce.

Literature Review

Talent Retention:

Despite extensive research on employee turnover, few comprehensive and effective resources on talent retention have been developed (David, G. et al., 2010). McDonnell et al. (2010) urge that few studies covering talent retention have been developed, despite recent research indicating that talent retention represents one of the key organizational issues. Some researchers now believe that turnover and retention are not simply two sides of the same construct (Cardy and Lengnick-Hall, 2011; Mitchell et al., 2001). Although talent is widely recognized as an important matter, whereby organizations engage in a global war to headhunt the best, there is still a lack of clarity on various issues related to talent definition (Lewis & Hechman, 2006; Colling & Mellahi, 2009). Gallardo et al. (2017) urge that talent definition in any organization will primarily depend on its competitive strategy, from which it derives value for the organization, and this should be the first step towards its development. Moreover, the nature of talent has been investigated by researchers from various aspects. One of these aspects focuses on the differentiation between nature and nurture (Govaerts et al., 2011). While a group of researchers believe that talent is inborn, stable, and innate, others believe that talent can be developed through training and development (Myers & Woerkom, 2014; Ericsson et al., 2007). The idea that talent is worth fighting for is based on the assumption that true talent cannot be developed and is therefore rare (Meyers et al., 2013). A more qualitative definition of talents describes that talents are those who have currently high potential with exceptional knowledge compared to others or future potential through adding real value to their organization, thereby supporting their organizations in achieving their business strategy (Boudreau & Ramstad, 2007; McDonnell, 2017; Swails, 2013).

Kyndt et al. (2009) & D'Armagnac et al. (2020) advised that retaining talents plays an important role in organizational competitive advantage, despite the fact that organizations are struggling to attract and retain their talents who can contribute to the improvement of organizational performance. David G. et al. (2010) urge as well that there might be a great concern within organizations about losing their ability to retain talents. While the direct costs associated with the loss of an investment in hiring and training new employees are a concern to organizations, the indirect costs associated with the loss of part of the organizational memory and the know-how, as well as cumulative knowledge that will join the talent when he/she resigns, represent the organizational most

important area of concern (Mitchell et al., 2001; Shaw et al., 2005). The researcher believes that when talents leave, organizations lose valuable expertise, institutional knowledge, and leadership capabilities. This can hinder operational effectiveness and innovation within the organization. In addition, hiring junior employees by organizations to fill gaps left by talents may lead to skill mismatches and performance challenges. Junior employees often require significant training and support, which can strain resources and affect productivity.

Talent Retention and Employee Engagement:

Numerous definitions have been proposed for employee engagement; these definitions frequently bear similarities to other well-established and well-defined conceptions, such as organizational citizenship behavior and organizational commitment (Saks, 2006; Saks & Gruman, 2014). One of the most popular academic definitions of employee engagement is the one provided by William Kahn. According to Kahn (1990), engagement involves a rational decision-making process in which individuals make decisions about the extent to which they will bring their whole selves to their work by investing their physical, cognitive, and emotional energies in their assigned tasks. The definition explains that engaged employees are fully committed to their work, and they are more than willing to invest their efforts in contributing to their organizational success. Shuck et al. (2017) offered one of the most current conceptualizations of employee engagement, summarizing that it comprises behavioral, emotional, and cognitive engagement. Cognitive engagement derives from an employee's appraisal of whether their work is meaningful and safe from many aspects, such as physically, emotionally, and psychologically, in addition to whether the employee has sufficient resources to complete the assigned tasks efficiently and with quality, while emotional engagement covers employees' personal beliefs and feelings that are emotionally connected to their organization, meanwhile, emotional engagement derives from an employee's willingness to involve personal resources such as pride, belief, and knowledge following a positive cognitive appraisal, and finally, behavioral engagement involves employees' willingness to challenge themselves through working harder for the benefit of their organization (Shuck et al., 2014; Shuck et al., 2017).

The most important difference between engaged and disengaged employees is in their way of perceiving their jobs, as engaged employees used to go above and beyond the line of their duties to assure the quality of their outputs, while disengaged employees used to perform the minimum required and assume

they had fulfilled the assigned tasks (Deepika & Sampurna, 2018). According to Kahn (1990), employees are more likely to get engaged in their work if they feel that it has social, emotional, and financial worth. If they do not get what they expect, they tend to withdraw from their roles and disengage themselves. Bakker & Demerouti (2008) defined four reasons in their research clarifying why engaged employees used to perform in a better way if compared by the non-engaged ones. Engaged employees often experience positive emotions, and this may be the reason why they are more productive; experience better health; create their own job and personal resources; and transfer their engagement to others.

Some researchers have suggested that there may be a redundancy between engagement and other constructs such as job satisfaction and organizational commitment (Newman & Harrison, 2008; Wefald & Downey, 2009). Employee engagement is associated with job satisfaction in that employees who are highly engaged are likely to also be satisfied; however, it is possible for employees to be satisfied but not fully engaged in their work, as they may be satisfied with their compensation package but lack a sense of connection somehow to the organizational goals, resulting in a lower level of engagement (Brief & Howard, 2002). Satisfaction may reflect an employee who is satisfied in general but may not also be actively motivated and fully engaged (Macey & Schneider, 2008; Harter, J.K. et al., 2002). Employee engagement is associated with organizational commitment as well, as it seems to be more closely related to affective organizational commitment if compared with the other two dimensions of organizational commitment: normative and continuance (Saks & Gruman, 2011). Researchers urged that engagement contains a component of organizational commitment embedded within the construct (Macey & Schneider, 2008; Shuck et al., 2013). Guest, D.E. (2014) argued as well that an integrated system of human resources management policies, practices, and procedures must clearly incorporate engagement.

Employee engagement and talent retention are two critical factors which contribute to the success and growth of organizations in today's competitive business environment (James, Frank, & Theodore, 2002). James et al. (2002) urged as well that employee engagement and talent retention are closely related, as engaged employees are more likely to be satisfied and motivated in their roles, leading to a higher level of productivity, innovation, and overall job performance. A study developed by Deepika and Sampurna (2018) concluded that one of the most effective tools for ensuring employees' engagement and commitment to their work is talent management, which supports in retaining talents through the coordination of talent management practices and employee engagement initiatives. The study concluded as well that when employees are engaged, they

tend to develop a strong emotional connection with their work and the organization, which in turn increases their loyalty and commitment to remain in the organization. Moreover, another study developed by Kossyva, D. et al. (2023) aimed to explore talent retention in knowledge-intensive industries through investigating the mediating processes between the existence and application of human resource management and employee turnover. The study was performed on a sample of one hundred and sixty-eight talented employees in over six European countries. The study demonstrated that talented employees are engaged in both their work and the organization at cognitive, emotional, and behavioral engagement levels, and in other words, highly engaged and talented employees are not willing to leave their work and their organization. The study results indicated that knowledge-intensive services organizations may achieve higher talent retention through the interaction of human resource management with knowledge management and change management practices. This interaction may lead to enhanced employee engagement. These studies support the researcher's proposed hypothesis covering the positive relation between employee engagement and talent retention and answer the researcher's main question that there is an impact of employee engagement on talent retention in the Egyptian petroleum sector organizations. Employee engagement influences other variables beside talent retention such as organizational performance, productivity, financial performance, individual attitudes, behavior, and performance (Harter, Schmidt, & Hayes, 2002; Richman, 2006). A study developed by Moussa M. (2013) to investigate the reasons for the high turnover through examining selected antecedents of employee engagement in Saudi Arabia's nationals versus non-Saudis'. The study was performed on a sample of one hundred and four employees in the healthcare and information technology industries in Saudi Arabia. The study results indicated that job characteristics and rewards have a positive relationship with employee engagement. The study findings revealed as well that job characteristics induce employee engagement, while reward and recognition induce organizational engagement. Based on the literature, high levels of employee engagement will result in higher levels of talent retention within the organization. Therefore, the following hypothesis is proposed:

H1: Employee engagement is positively related to talent retention.

Job Embeddedness and Employee Engagement

Allen D. (2006) urge that engaged employees are more likely to develop a sense of belonging and commitment to their organization. This emotional connection enhances job embeddedness. Engagement fosters collaboration and positive relationships among employees. These social ties contribute to job embeddedness, as employees feel more integrated into their workplace. Holtom et al. (2006) urge that when employees feel that their organization values the complexity of their lives and tries to support them in this regard trying to balance all the conflicting demands, employees then tend to be more productive and remain with their organizations longer. Job embeddedness captures some of this complexity by measuring both on the job and off the job components that most contribute to an employee to retain in the organization. Saks (2006) suggests that work engagement is associated with an individual's attitudes, intentions and behaviors, therefore, engaged employees are likely to be more attached to their organizations and would have a lower attitude towards leaving their job, moreover, engaged employees often align their personal values with the organization's mission, improving their perceived fit. This alignment increases job satisfaction and embeddedness. High levels of engagement can lead to a greater perception of what employees would lose if they left the organization, such as relationships and career development opportunities, thereby enhancing job embeddedness. Engaged employees tend to perform better, leading to more opportunities for professional growth and investment in the organization, which further embeds them in their roles (Schaufeli & Bakker, 2004). Shuck et al. (2017) found a positive correlation between employee engagement and job embeddedness suggesting that organizations should prioritize engagement initiatives to strengthen employees' ties to their roles. Organizations that focus on improving employee engagement can expect to see a corresponding increase in job embeddedness, leading to higher overall productivity. The longitudinal study emphasizes the need for continuous engagement efforts, particularly in high-turnover environments. Based on the literature, high levels of employee engagement will result in higher levels of job embeddedness within the organization. Therefore, the following hypothesis is proposed:

H2: Employee engagement is positively related to job embeddedness.

Talent Retention and Job Embeddedness

Mitchell et al. (2001a) suggest that analyzing job embeddedness differs from traditional models for predicting turnover because it focuses on employee retention rather than employee turnover. These ideas challenge the conventional wisdom that dissatisfied people leave and money makes them stay. People often leave for reasons unrelated to their jobs. In many cases, unexpected events or shocks are the cause. Employees also often stay because of attachments and their sense of fit, both on the job and in their community. This view is supported by Mitchell et al. (2001), who found that job embeddedness predicted turnover better than the traditional job attitude models. Therefore, the theory of job embeddedness focuses on keeping employees in the organization rather than keeping them from leaving for other organizations (Mitchell, Holtom, & Lee, 2001a). Employees' job embeddedness and work engagement are starting to be recognized as important factors in retaining valuable talented employees and are seen to offer organizations a competitive advantage (Bakker, Schaufeli, Leiter & Taris, 2008; Mitchell et al., 2001a).

Mitchell et al. (2001) and Schaufeli & Bakker (2004) suggest that turnover intention can be driven by a lack of embeddedness and a disengaged workforce. A study by Halbesleben & Wheeler (2008) using a sample of US employees from a wide variety of industries and occupations (N = 587), their supervisors, and their closest co-worker reported a significant relationship between work engagement, job embeddedness, and turnover intention. In terms of job embeddedness and turnover intention, Mitchell et al. (2001) reported that people who are embedded in their jobs have less intent to leave the organization, while Halbesleben (2010) found a significant relationship between work engagement and turnover intention.

Embeddedness and engagement have become popular concepts that promote employee retention (Halbesleben & Wheeler, 2008). Job embeddedness is a combination of forces that keep an individual from leaving the job (Mitchell et al., 2001). Whereas work engagement represents a positive work-focused psychological state that keeps an employee in the job (Schaufeli et al., 2002). Research has found a significant negative relationship between job embeddedness and turnover intention (Allen, 2006; Crossley et al., 2007; Halbesleben & Wheeler, 2008). In addition, job embeddedness seems to predict turnover more than combinations of perceived desirability and ease of movement measures do (e.g., job satisfaction, organizational commitment, job alternatives, and job search). Mitchell and Lee (2001) highlight as well the fact that highly embedded and satisfied employees are less likely to search for alternative

employment opportunities. On the other hand, embedded employees may feel stuck in unfavorable jobs, experience frustration, or lose motivation due to fear of losing connections with entities of the job or what they would have to give up should they consider leaving their jobs (Crossley et al., 2007).

Based on the literature, high levels of job embeddedness will result in higher levels of talent retention within the organization. Therefore, the following hypothesis is proposed:

H3: Job Embeddedness is positively related to Talent Retention.

Talent Retention and Perceived Organizational Support:

Saks (2006) used the theory of social exchange to explain how individuals would differ in their response according to how they perceive the antecedents and whether employees would reciprocate with performance. The researcher advised that employees tend to become loyal and trusting over time as long as the organization is fair in applying procedures and resources; the relationship between employee and organization is well defined. The study comprises (N =102) employees working at different organizations and in different jobs. The results showed that perceived organizational support had a significant positive relationship with job and organizational engagement. The study also revealed that job characteristics predict job engagement, while procedural justice predicts organizational engagement. Procedural justice is an antecedent to perceived organizational support; it predicts it as it means that perceived organizational support is provided.

A study developed by Sabila et al. (2024) explores employee engagement's role as a mediator in the influence of perceived organizational support on the retention of pharmaceutical employees. The study method used is quantitative cross-sectional. Purposive sampling was used with (N =212) employees from private pharmaceutical companies. The mediation analysis results showed that employee engagement plays a significant role as a partial mediator in enabling companies to retain talented employees in the relationship between perceived organizational support and employee retention. The key to employee retention was found to be employee engagement, where retention management and employee commitment can help acquire and retain the best talent. This study provides insights into the importance of perceived organizational support and employee retention in enhancing employee engagement. Employees nowadays look for organizations which provide a fair and reasonable work environment where everyone feels accepted, respected, and valued (Suliman & Al Kathairi, 2012). Fairness should be adopted not only because accuracy is not achievable

but also because justice is an important societal value, and feelings of justice have significant consequences for both the workplace and society as a whole. The concept of organizational justice has become significant in social science since 1990; in addition, the majority of organizational justice studies have been published during this period (Cohen & Spector, 2001). Justice has been conceptualized based on three dimensions: distributive justice, procedural justice, and interactional justice (Cropanzano et al., 2007). Distributive justice, which is based on Adams's (1963) equity theory, refers to the perceived fairness of outcomes such as promotion opportunities or financial rewards. It is predicted to be related mainly to cognitive, affective, and behavioral reactions to particular outcomes; thus, when a particular outcome is perceived to be unfair, it should affect the person's emotions, such as anger, happiness, pride, or guilt (Colquitt J. et al., 2001).

Nowadays, talent retention has become a major issue for organizations to maintain a competitive edge (Sahi & Mahajan, 2014). This is why organizational justice has driven researchers to investigate its effects on employee attitudes and behaviors (Bernerth & Walker, 2012). Such attitudes cover job satisfaction, organizational commitment, and turnover intention (Colquitt et al., 2001). Many researchers have investigated the influence of justice perception on employee retention in various contexts and found that employees perceiving higher fairness are less likely to leave the organization (DeConinck & Johnson, 2009; Nadiri & Tanova, 2010).

Nadiri & Tanova (2010) investigated the relationship between organizational justice perceptions, turnover intentions, job satisfaction, and organizational citizenship behavior in the hospitality industry in North Cyprus. The results showed that distributive justice tended to be a stronger predictor of all of the study variables compared to procedural justice. Findings suggested that the fairness of personal outcomes that employees receive may have a greater impact on turnover intentions, job satisfaction, and organizational citizenship behavior than the perceived fairness of organizational procedures. Mossua, M. (2013) developed a study to investigate how perceived procedural justice and exchange ideology influence employees' commitment in Saudi private sector organizations. The study was performed on one hundred and four of Saudi employees. The study results demonstrated that perceptions of procedural justice influenced employees' commitment towards their organizations. Employees with high exchange ideology who perceive procedural justice as unfair and fear the loss of such fairness would consider staying with their organizations risky and would intend to leave were not affectively committed toward their organizations, whereas those with low exchange ideology who perceive procedural justice had

a moderate or no relationship with affective commitment. Perceived organizational justice is a prerequisite for organizational support; once employees believe that such justice exists, they then believe they have organizational support.

Wong & Wong (2017) explored the relationships between turnover intention, perceived organizational support, and affective commitment by developing a case study on a foreign-invested manufacturing company in China. The study findings indicated that there is a positive relationship between distributive justice, trust in organizations, job security, and employees' intention to stay. The results also indicated that perceived organizational support has an impact on affective commitment instead of affecting turnover intention directly.

Based on the literature, high levels of perceived organizational support will result in higher levels of employee engagement, which will result in a higher level of talent retention within the organization. Therefore, the following hypothesis is proposed:

H4: Perceived organizational support will moderate the relation between employee engagement and talent retention.

Job Embeddedness as a mediator between employee engagement and talent retention:

Job embeddedness is defined as the extent to which employees feel connected to their organization and community (Mitchell & Holtom, 2001). Previous research demonstrated a positive relationship between employee engagement and job embeddedness (Saks, 2006). Following Saks (2006), employees who are engaged tend to form strong connections and feel a strong alignment with their organization, which increases their overall sense of embeddedness. As a result, greater job embeddedness leads to improved talent retention since employees who feel more connected perceive leaving as a more significant loss (Allen et al., 2010). This indicates that job embeddedness might play a mediating role in the relationship between employee engagement and talent retention. Meyer and Allen (1993) offer a framework that connects engagement and job embeddedness within the larger scope of organizational commitment. They categorize commitment into three categories: affective, continuance, and normative. By associating job embeddedness with these types of commitment, they demonstrate that embeddedness can strengthen affective commitment, resulting in better retention rates. Their suggestions highlight the importance of holistic strategies that promote both engagement and embeddedness, including mentorship programs and opportunities for career

development. Holtom et al. (2006) contributed significantly to the understanding of job embeddedness by classifying it into three dimensions: links, fit, and sacrifice. The link dimension reflects the social connections employees have within the organization. Strong social ties can lead to increased job embeddedness and may reduce turnover, while the fit dimension reflects employees who perceive a strong alignment between their personal values and the organization's culture experience greater embeddedness, which enhances their commitment, and the third dimension of sacrifice represents the perceived costs associated with leaving, such as lost relationships and benefits, which reinforce job embeddedness. Holtom et al. (2006) argue as well that job embeddedness not only influences retention but also may mediate the impact of engagement on retention. Bakker et al. (2008) argue that job embeddedness is linked to the organization and the workplace; hence, higher levels of job embeddedness are associated with a lower desire to leave the organization. On the other hand, work engagement is more closely tied to energy and psychological attachment to one's job; consequently, individuals who are more involved with their work may be unwilling to disengage due to invested energy and high degrees of identification with the job. A study developed by Takawira, N. et. al. (2014) to explore the relationship between job embeddedness, work engagement, and turnover intention of staff in a higher education institution. A cross-sectional quantitative survey was conducted on a non-probability purposive sample (N = 153) of academic and non-academic staff in a South African higher education institution. Correlational analyses revealed significant relationships between job embeddedness, work engagement, and turnover intention. Multiple regression analyses showed that organizational links and dedication significantly and negatively predict turnover intention. Previous research indicates that employee engagement significantly predicts job embeddedness, which in turn predicts talent retention. As an example, studies have shown that organizations which promote high levels of engagement also report higher job embeddedness, and as a consequence, lower turnover intentions among employees were detected (Holtom et al., 2006). Lee et al. (2012) also anticipated that high levels of job embeddedness first reduce employees' turnover intentions, which, subsequently, relate to actual turnover. The research concluded that managers should react in a timely manner to low job embeddedness indicators before it escalates into a tide of withdrawal cognitions and subsequent behavior. Moreover, managers may consider alternative approaches to improving employee performance, which may further retain employees in organizations.

Based on the literature, high levels of job embeddedness will result in higher levels of employee engagement which will result in higher level of talent retention within the organization. Therefore, the following hypothesis is proposed:

H5: Job Embeddedness will mediate the relation between employee engagement and talent retention.

Research Methodology

Research Design

The hypotheses investigated in this study were tested by conducting a quantitative study that used a survey as the form of data collection. Data was collected anonymously using a Survey Monkey questionnaire. A cross-sectional study is applied in this study, as the data were gathered just once over a period of two weeks in order to answer research questions.

A probability sampling technique is applied for the selection of a sample from a well-defined population of the Egyptian petroleum sector organizations. A stratified random sampling procedure is applied as a selected segment (talent) within the petroleum sector organizations is considered as the target layer to respond to the questionnaires. A closed-ended questionnaire was developed to cover talents working on selected organizations from the Egyptian petroleum sector covering a wide spectrum of specialties such as engineering, construction, production, refining, petrochemical, and maintenance. From a specified confidence level of 95% and 5% error, the minimum sample size calculated from the total population of 194000 employees is 384 employees (Krejcie & Morgan, 1970). Prior to the distribution of the questionnaire, a pilot study of the questionnaire was conducted to test for accuracy relating to time allocation on forty-one employees from different Egyptian petroleum sector organizations, clarity of the questions, and the respondent's responses.

Research Proposed Conceptual Framework

After reviewing previous literature, the researcher seeks to construct the following research proposed conceptual framework with the support of job embeddedness theory as one of the motivational theories to represent all the research variables and constructs extracted from both of the reviewed literature and to identify the expected trends of relations between each of them:

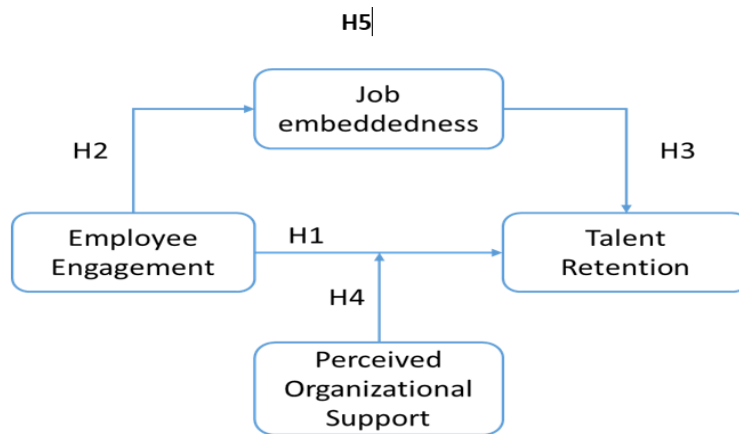


Figure 1: Research Proposed Conceptual Framework

Source: Prepared by the Researcher

Research Measurements and Instrument Development

The questionnaire is anchored on a 5-point Likert scale; the response categories ranging from (1-strongly disagree to 5-strongly agree).

For talent retention, 11 items were adopted from the study of Kyndt et al. (2009) with Cronbach's Alpha is 0.91.

For Job Engagement, 4 items were adopted from the study of (Moussa, 2013) with Cronbach's Alpha of 0.76 based on the surveys developed by (Saks, 2006), and for organization engagement, 5 items were adopted from the study of (Moussa, 2013) with Cronbach's Alpha of 0.92 based on the survey developed by (Saks, 2006).

For Job embeddedness, 7 items were adapted by Crossley et. al. (2007). Cronbach's Alpha for the job embeddedness scale is 0.88, and For Perceived Organizational support, 6 items were selected which were adopted from the study of (Moussa, 2013) with Cronbach's Alpha of 0.89 based on the survey developed by (Saks, 2006).

Statistical Analysis Tools:

Descriptive statistical analyses, and correlation analyses between the variables were conducted with the SPSS statistical software program (version 20.0).

Data Analysis, Findings and Discussions:

Analyzing Descriptive Statistics of Research Variables

Descriptive statistics provide a foundational overview of the data collected from the 470 talented employees surveyed, covering different specialties of the Egyptian petroleum sector organizations such as engineering, construction, production, refining, petrochemical, and maintenance. By summarizing the central tendencies, variability, and distribution of responses, insights could be gained into the current state of employee engagement and talent retention, the role of job embeddedness as a mediator, and the role of perceived organizational support as a moderator.

Talent Retention Item Descriptive Statistics:

Talent Retention Total Scale:

Table 1: Talent Retention Total Scale

N	Min.	Max.	Mean	SD	Lower Bond	Upper Bond	Mediation	Interquartile Range
470	9.1	88.6	54.18	0.64	52.93	55.44	54.5	20.4

Source: Result of the statistical analysis

Table 1 illustrates talent retention total scale within the Egyptian petroleum sector organizations. The wide range (from 9.1% to 88.6%) indicates significant variability in how different employees perceive their retention. Some employees feel very secure in their positions, while others feel quite the opposite. The mean retention rate of 54.18% suggests that, on average, employees have a moderate level of retention. The lower and higher confidence intervals (52.93% to 55.44%) indicate a range within which the real mean retention rate may be reasonably determined.

Employee Engagement Item Descriptive Statistics:

Employee Engagement Total Scale:

Table 2: Employee Engagement Total Scale

N	Min	Max	Mean	SD	SE M	Lower Bond	Upper Bond	Mediation	Interquartile Range
470	0	100	63.74	16.50	0.76	62.25	65.24	66.70	22.20

Source: Statistical Analysis Results

Table 2 illustrates the employee engagement total scale statistical results of the respondents within the Egyptian petroleum sector organizations. The minimum engagement score of 0% indicates that some employees may feel completely disengaged, while the maximum score of 100% shows that others are fully engaged. This wide range suggests diverse employee experiences within the Egyptian petroleum sector organizations. The mean engagement score of 63.74% indicates a moderate level of engagement overall. This suggests that, on average, employees are somewhat engaged, but there is room for improvement.

Job Embeddedness Item Descriptive Statistics:

Job Embeddedness Total Scale:

Table 3: Job Embeddedness Total Scale

N	Min	Max	Mean	SD	SE M	Lower Bond	Upper Bond	Mediation	Interquartile Range
470	0	100	54.34	20.89	0.96	52.45	56.23	53.60	28.50

Source: Statistical Analysis Results

Table 3 illustrates the job embeddedness total scale statistical results of the respondents within the Egyptian petroleum sector organizations. The minimum score of 0% indicates some employees may feel fully unembedded in their jobs, while the maximum score of 100% indicates that others feel fully integrated into their roles and the organization. The mean job embeddedness score of 54.34% shows that, on average, employees have a moderate sense of job embeddedness.

This suggests that many employees feel somewhat connected to their roles and the organization, but there is potential for improvement. This suggests that while many employees are engaged and embedded in their roles, targeted efforts are needed to enhance embeddedness and retention across their organizations.

Perceived Organizational Support Item Descriptive Statistics:

Perceived Organizational Support Total Scale:

Table 4: Perceived Organizational Support Total Scale

N	Min	Max	Mean	SD	SE M	Lower Bond	Upper Bond	Median	Interquartile Range
470	0	100	50.01	22.24	1.03	49.99	50.02	50.00	29.20

Source: Statistical Analysis Results

Table 4 illustrates the perceived organizational support total scale statistical results of the respondents within the Egyptian petroleum sector organizations. The minimum score of 0% indicates some employees may feel fully unsupported from their organizations, while the maximum score of 100% indicates that others feel fully supported. The mean perceived organizational support score of 50.01 shows that, on average, employees have a moderate sense of perceived organizational support. This indicates that while some employees feel adequately supported, many do not, which could impact their overall engagement and retention. Given that 50% is a moderate mean, the significant variability indicates that many employees may feel unsupported. This could lead to increased turnover intentions, especially among those who perceive low levels of support. Organizations must address the needs of these employees to enhance retention.

Hypotheses Testing:

H1: Employee engagement will have a positive impact on talent retention.

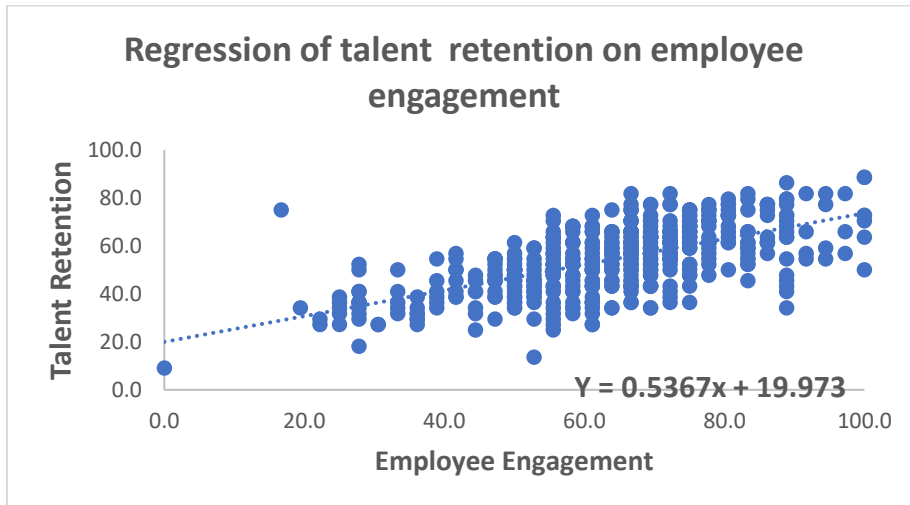


Figure 2: Regression of Employee Engagement on Talent Retention

Table 5: Regression analysis Results of Employee Engagement on Talent Retention

Regression Equation	Y = 0.5367X + 19.973 Where; (Y) is the Talent Retention, and (X) is employee engagement
P value (Probability Value)	0.00 (Less than 0.001)
Spearman's rho Correlation coefficient	0.64

Source: Statistical Analysis Results

Table 5 and figure 2 illustrate the regression analysis results of employee engagement on talent retention of the respondents within the Egyptian petroleum sector organizations. The slope of the developed regression equation of 0.5367 indicates that for every one-unit increase in employee engagement, talent retention increases by approximately 0.5367 units. This positive relationship supports the study hypothesis that higher employee engagement will improve talent retention. A p-value of 0.000 indicates that the results are statistically significant at any conventional alpha level (e.g., 0.05 or 0.01). This means that

there is strong evidence to reject the null hypothesis, affirming that there is a statistically significant positive impact of employee engagement on talent retention. The Spearman's rho coefficient is calculated at 0.64. This indicates a strong positive correlation between employee engagement and talent retention. A coefficient of 0.64 suggests that as employee engagement increases, talent retention also tends to increase significantly. This finding reinforces the idea that engaged employees are more likely to remain with the organization. In summary, the statistical analysis reveals a significant positive relationship between employee engagement and talent retention, as demonstrated by the regression equation, Spearman's rho correlation coefficient, and the p-value. These findings contribute to the understanding of how enhancing employee engagement can improve talent retention within the Egyptian petroleum sector organizations.

H2: Employee engagement will have a positive impact on job embeddedness.

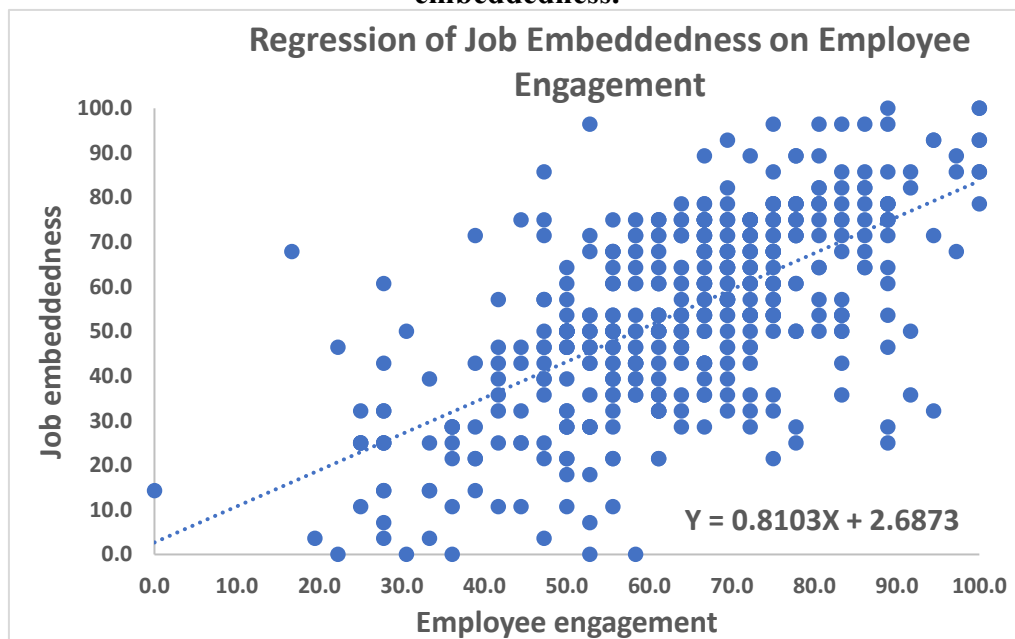


Figure 3: Regression of job Embeddedness on Employee Engagement
Source: Statistical Analysis Results

Table 6: Regression Analysis Results of Job Embeddedness on Employee Engagement

Regression Equation	$Y = 0.8103X + 2.6873$ Where; (Y) is the Job Embeddedness, and (X) is employee engagement
P value (Probability Value)	0.00 (Less than 0.001)
Spearman's rho Correlation coefficient	0.62

Source: Statistical Analysis Results

Table 6 and figure 3 illustrate the regression analysis results of employee engagement on job embeddedness of the respondents within the Egyptian petroleum sector organizations. The slope of the developed regression equation of 0.8103 indicates that for every one-unit increase in employee engagement, job embeddedness increases by approximately 0.8103 units.

This positive relationship supports the study hypothesis that higher employee engagement will improve job embeddedness. A p-value of 0.000 indicates that the results are statistically significant at any conventional alpha level (e.g., 0.05 or 0.01). This means that there is a strong evidence to reject the null hypothesis, affirming that there is a statistically significant positive impact of employee engagement on job embeddedness. The Spearman's rho coefficient is calculated at 0.62. This indicates strong positive correlation between employee engagement and job embeddedness. A coefficient of 0.62 suggests that as employee engagement increases, job embeddedness also tends to increase significantly. This finding reinforces the idea that engaged employees are more likely to remain with the organization. In summary, the statistical analysis reveals a significant positive relationship between employee engagement and job embeddedness, as demonstrated by the regression equation, Spearman's rho correlation coefficient, and the p-value. These findings contribute to the understanding of how enhancing employee engagement can lead to higher job embeddedness, which in turn may improve talent retention within the Egyptian petroleum sector organizations.

H3: Job embeddedness will have a positive impact on talent retention

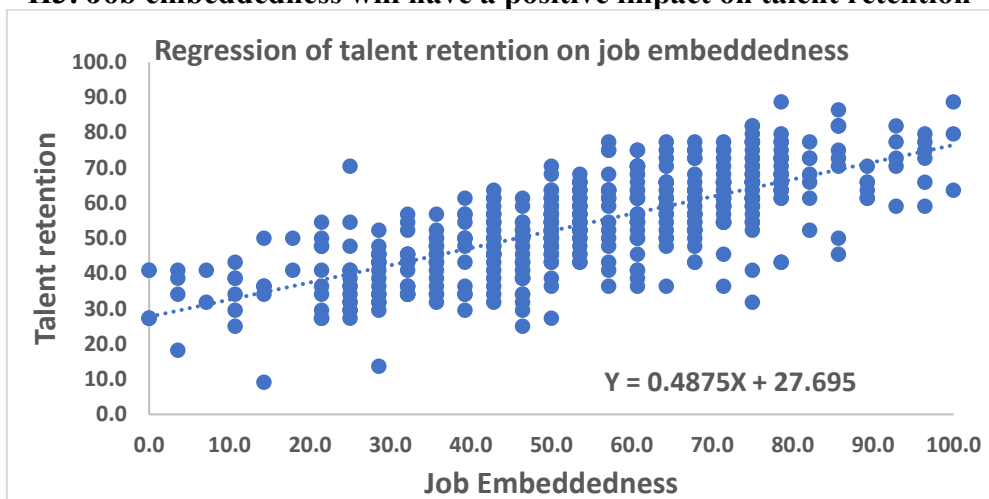


Figure 4: Regression of Talent Retention on Job Embeddedness Source: Statistical Analysis Results

Table 7: Regression Analysis Results of Talent Retention on Job Embeddedness

Regression Equation	$Y = 0.4875X + 27.695$ Where; (Y) is talent retention, and (X) is Job embeddedness
P value (Probability Value)	0.00 (Less than 0.001)
Spearman's rho Correlation coefficient	0.74

Table 7 and figure 4 illustrate the regression analysis results of talent retention on job embeddedness of the respondents within the Egyptian petroleum sector organizations. The slope of the developed regression equation of 0.4875 indicates that for every one-unit increase in job embeddedness, talent retention increases by approximately 0.4875 units. This positive relationship supports the study hypothesis that higher job embeddedness will improve talent retention. A p-value of 0.000 indicates that the results are statistically significant at any conventional alpha level (e.g., 0.05 or 0.01). This means there is strong evidence to reject the null hypothesis, affirming that there is a statistically significant positive impact of job embeddedness on talent retention. The Spearman's rho coefficient is calculated at 0.74. This indicates a strong positive correlation

between job embeddedness and talent retention. A coefficient of 0.74 suggests that as job embeddedness increases, talent retention also tends to increase significantly. In summary, the statistical analysis reveals a significant positive relationship between job embeddedness and talent retention, as demonstrated by the regression equation, Spearman's rho correlation coefficient, and the p-value. These findings contribute to the understanding of how job embeddedness is crucial to talent retention within the Egyptian petroleum sector organizations.

H4: Perceived organizational support will moderate the relation between employee engagement and talent retention.

SPSS output of Multiple Regression Model:

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Interaction Employee Engagement and Perceived Organizational Support centered, Employee Engagement centered		Enter

a. Dependent Variable: Talent retention total scale

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722 ^a	.521	.518	9.62461

a. Predictors: (Constant), Interaction Emp Eng & P Org Supp, Perceived Organizational Support centered, Employee Engagement

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46906.252	3	15635.417	168.789	.000 ^b
	Residual	43167.005	466	92.633		
	Total	90073.257	469			

a. Dependent Variable: Talent retention total scale

b. Predictors: (Constant), Interaction Emp Eng & P Org Supp, Perceived Organizational Support centered, Employee Engagement centered

Coefficients ^a							
		Unstandardized Coefficients		Standardized Coefficients	t	P Value	Conclusion
		B	Std. Error	Beta			
Model							
1	(Constant)	54.188	0.488		111.09	0.00000	P < 0.001 Highly Significant
	Employee Engagement centered	0.354	0.032	.422	10.93	0.00000	
	Perceived Organizational Support centered	0.249	0.024	.399	10.44	0.00000	
	Interaction Emp Eng & P Org Supp	0.000	0.001	-.001	-0.02	0.98187	P > 0.05 Non Significant

a. Dependent Variable: Talent retention total scale

The results of the multiple regression showed a significant main effect of employee engagement on talent retention ($B1 = 0.354$, standard error = 0.032, $p < 0.001$), indicating that increasing employee engagement will increase talent retention. There was also a significant main effect of perceived organizational support on talent retention ($B2 = 0.249$, standard error = 0.024, $p < 0.001$), indicating that increasing perceived organizational support leads to increasing talent retention. Both employee engagement and perceived organizational support have significant positive relationships with talent retention. This suggests that increasing either factor is associated with higher talent retention among employees. However, there is non-significant interaction between employee perceived organizational support and employee engagement ($B3 = 0.00$, standard error = 0.001, $p = 0.98$), indicating a non-moderating effect of perceived organizational support on the relation of employee engagement and talent retention. In other words, the impact of employee engagement on talent retention is not affected by the level of perceived organization support. Reject $H4$.

Visualization of the moderation effect:

To visualize the fact of no moderation effect of perceived organizational support (POS) the sample will be classified to three groups according to the reported perceived organizational support, Low (<35), Medium from (35 to <70) and High perceived organizational support will be from (70 or higher).

	Frequency	%
Low POS	113	20.04
Medium POS	229	48.72
High POS	128	27.23

One of the most common ways to visualize an interaction is to plot the predicted values of the outcome variable for different levels of the predictors. The scatter plot of employee engagement and talent retention is drawn for each group separately.

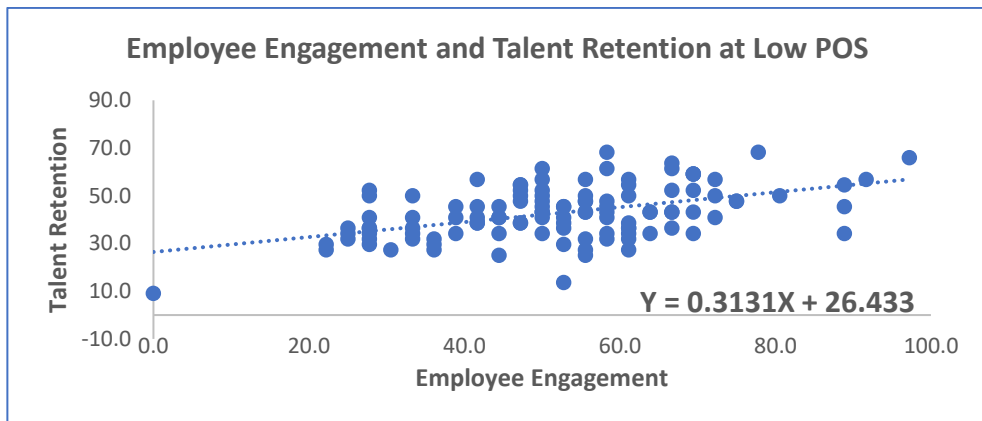


Figure 5: Employee Engagement and Talent Retention at Low POS Source: Statistical Analysis Results

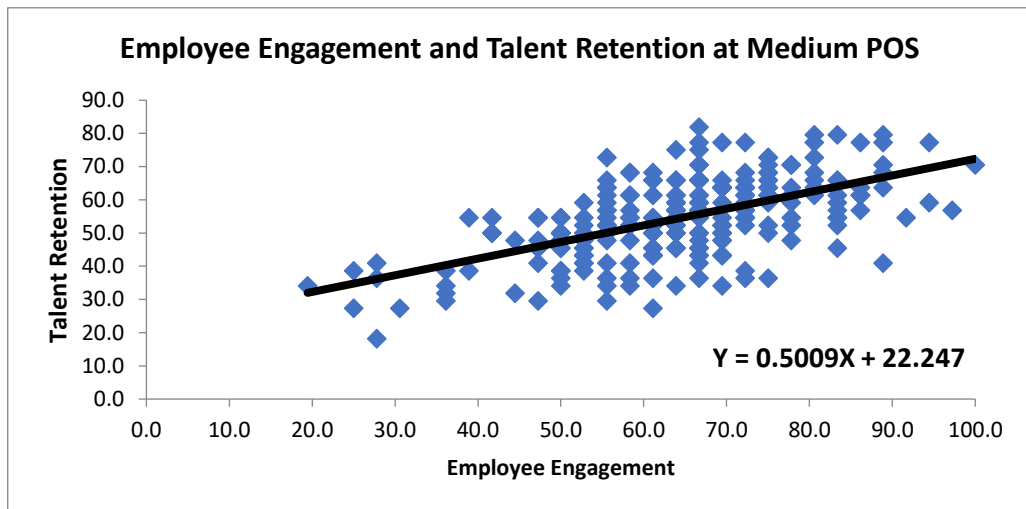


Figure 6: Employee Engagement and Talent Retention at Medium POS Source: Statistical Analysis Results

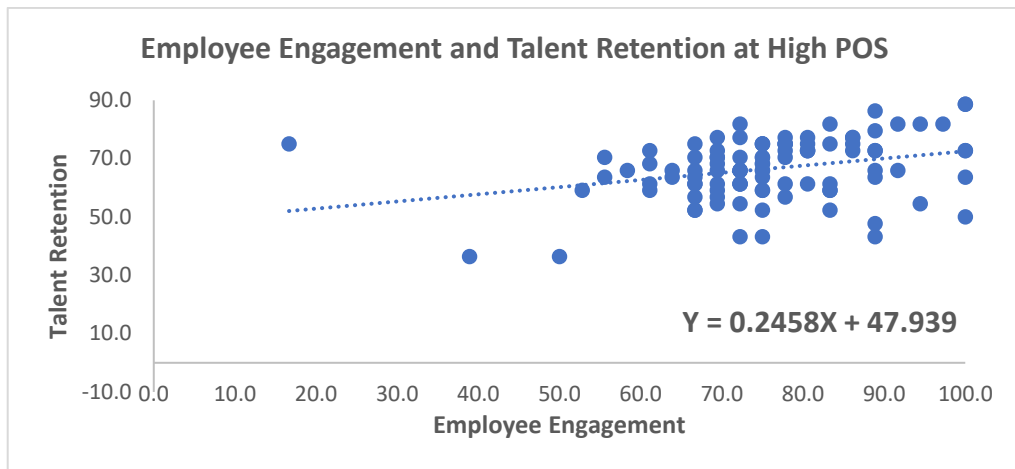


Figure 7: Employee Engagement and Talent Retention at High POS

Source: Statistical Analysis Results

It is clear that there are no noticeable differences between the trends in the three graphs, confirming the multiple regression conclusion of no moderating role of perceived organizational support on employee engagement and talent retention.

H5: Job embeddedness will mediate the relation between employee engagement and talent retention.

First Regression:

Dependent Variable: Job Embeddedness

Predictor Variable: Employee Engagement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.640 ^a	.410	.409	16.05898

a. Predictors: (Constant), Employee Engagement total scale

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	83912.271	1	83912.271	325.379	.000 ^b
Residual	120692.935	468	257.891		
Total	204605.206	469			

a. Dependent Variable: Job Embeddednesstotal scale

b. Predictors: (Constant), Employee Engagement total scale

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.671	2.959		.903	.367
	Employee Engagement total scale	.811	.045	.640	18.038	.000

a. Dependent Variable: Job Embeddednesstotal scale

Second Regression:

Dependent Variable: Talent Retention

Predictor Variable: Employee Engagement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.639 ^a	.409	.407	10.66869

a. Predictors: (Constant), Employee Engagement total scale

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	36805.097	1	36805.097	323.360	.000 ^b
Residual	53268.160	468	113.821		
Total	90073.257	469			

a. Dependent Variable: Talent retention total scale

b. Predictors: (Constant), Employee Engagement total scale

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.965	1.966		10.158	.000
	Employee Engagement total scale	.537	.030	.639	17.982	.000

a. Dependent Variable: Talent retention total scale

Third Regression:

Dependent Variable: Talent Retention

Predictor Variable: Job Embeddedness

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735 ^a	.540	.539	9.41283

a. Predictors: (Constant), Job Embeddedness total scale

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	48607.791	1	48607.791	548.612	.000 ^b
Residual	41465.466	468	88.601		
Total	90073.257	469			

a. Dependent Variable: Talent retention total scale

b. Predictors: (Constant), Job Embeddednesstotal scale

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	27.698	1.211		22.867	.000
	Job Embeddednessto	.487	.021	.735	23.422	.000

a. Dependent Variable: Talent retention total scale

Fourth Regression:

Dependent Variable: Talent Retention

Predictor Variables: Employee Engagement and Job Embeddedness

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.767 ^a	.588	.586	8.91495

a. Predictors: (Constant), Job Embeddednesstotal scale, Employee Engagement total scale

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	52957.769	2	26478.884	333.167	.000 ^b
Residual	37115.488	467	79.476		
Total	90073.257	469			

a. Dependent Variable: Talent retention total scale

b. Predictors: (Constant), Job Embeddedness total scale, Employee Engagement total scale

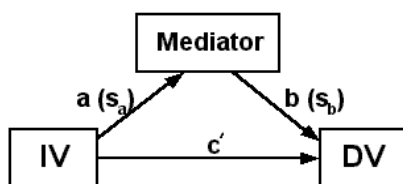
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	18.988	1.644		11.551	.000
	Employee Engagement total scale	.240	.032	.286	7.398	.000
	Job Embeddednesstotal scale	.366	.026	.551	14.256	.000

a. Dependent Variable: Talent retention total scale

Conclusion of the Mediation Analysis:

A significant direct relationship between employee engagement (EE) and job embeddedness (JE). Job embeddedness is established from the first regression ($B = 0.811$ and $P < 0.001$). A significant direct relationship between employee engagement (EE) and talent retention (TR) is established from second regression ($B = 0.537$ and $P < 0.001$). Introduction of job embeddedness (JE) as a predictor with employee engagement (EE) in fourth regression showed that the relationship between employee engagement (EE) and talent retention (TR) is still significant ($B = 0.24$ $P < 0.001$). Notice the large reduction in coefficient B from 0.537 when it was considered alone to only 0.24 when it was controlled by job embeddedness (JE). To assess the significance of the mediation effect Sobel test is applied. The test is a statistical method used to assess the significance of the mediating variable in a mediation analysis.



The Sobel test statistic is calculated using the following formula:

$$Z\text{-value} = a \cdot b / \sqrt{b^2 \cdot s_a^2 + a^2 \cdot s_b^2}$$

Where:

Z: is the Sobel test statistic.

a: is the unstandardized regression coefficient for the effect of the independent variable (employee engagement) on the mediator (job embeddedness).

b: is the unstandardized regression coefficient for the effect of the mediator (job embeddedness) on the dependent variable (talent retention).

sa: is the standard error of the coefficient a.

sb: is the standard error of the coefficient b.

Z	11.18	
P value	0.000	P < 0.001 Highly Significant

Hence Job embeddedness (JE) is indeed mediating the relation between Employee Engagement (EE) and Talent Retention (TR).

Research Results and Discussions:

The analysis confirmed a positive relationship between employee engagement and talent retention (H1), where $P < 0.001$ (highly significant). This indicates that higher levels of engagement lead to greater retention among employees, supporting the idea that engaged employees are more committed and less likely to leave. The confirmed positive relationship underscores as well the significance of creating an engaging work environment. Engaged employees are more likely to feel a sense of belonging and commitment to their organization, thereby reducing turnover rates. Moreover, this result was found to be online with other studies which concluded that high levels of employee engagement will result in higher levels of talent retention within an organization (Shantz et al., 2016; Albrecht & Marty, 2017; Chopra & Sahoo, 2023).

The second hypothesis was also confirmed a significant positive relationship between employee engagement and job embeddedness, as demonstrated by the regression equation, Spearman's rho correlation coefficient, and the p value of ($P < 0.001$ highly significant). These findings contribute to the understanding of how enhancing employee engagement can lead to higher job embeddedness, which in turn may improve talent retention within the Egyptian petroleum sector organizations. Enhancing both employee engagement and job embeddedness by the sector organizations requires creating a supportive work environment and aligning the organizational goals with employee values. Organizations should regularly assess employee engagement and job embeddedness levels through surveys and feedback mechanisms, allowing for continuous improvement and adaptation of strategies. Moreover, this result was found to be online with other studies which asserted that high levels of employee engagement will result in higher levels of job embeddedness within an organization (Saks A, 2006; Shuck et al., 2017).

The third hypothesis was also confirmed, showing a positive relationship between job embeddedness and talent retention (H3). This supports the concept that when an organization develops a strong social connection, ensures good fit with employees, and highlights the expected sacrifices associated with leaving, the organization can enhance retention. Understanding this relationship can support the sector organizations to develop strategies to retain their talents and hence a more stable and effective workforce. Moreover, this result was found to be online with other studies which asserted that high levels of job embeddedness will result in higher levels of talent retention within an organization (Allen, 2006; Crossley et al., 2007; Halbesleben & Wheeler, 2008).

The fourth hypothesis regarding the moderating role of perceived organizational support on the relation between employee engagement and talent retention (H4) was rejected. The results of the multiple regression showed a significant main effect of employee engagement on talent retention ($p < 0.001$), indicating that increasing employee engagement will increase talent retention. There was also a significant main effect of perceived organizational support on talent retention ($p < 0.001$), indicating that increasing perceived organizational support leads to increasing talent retention. Both employee engagement and perceived organizational support have significant positive relationships with talent retention. This suggests that increasing either factor is associated with higher talent retention among employees. However, there is a non-significant interaction between employee perceived organizational support and employee engagement ($p = 0.98$), indicating non-moderating effect of perceived organizational support on the relation of employee engagement and talent retention. In other words, the impact of employee engagement on talent retention is not affected by the level of perceived organizational support.

The fifth hypothesis regarding the mediating role of job embeddedness on the relation between employee engagement and talent retention (H5) was also confirmed. This suggests that when employees are engaged, they develop stronger ties to their jobs, which, in turn, increases their likelihood of staying with the organization. Multiple regression analysis was utilized, particularly focusing on the mediating role of job embeddedness on the relation between employee engagement and talent retention. This analysis provided insights into how much of the variance in talent retention could be explained by employee engagement and job embeddedness.

Conclusion:

This study investigated the impact of employee engagement on talent retention in the Egyptian petroleum sector organizations with the mediating role of job embeddedness and the moderating role of perceived organizational support. The primary aim of the study was to examine the relationships between employee engagement, job embeddedness, and perceived organizational support on talent retention, from which the findings may contribute to the strength and sustainability of the Egyptian petroleum sector organizations through developing effective talent retention strategies, policies, and procedures which may secure the skilled workforce for years to come. The study employed a quantitative research design, using a sample of 470 employees covering the sector in different types (public, investment, and joint venture) and representing as well different specialties such as engineering, construction, production, refining, petrochemical, operation, and maintenance.

The goals of this research were largely achieved. Of the five hypotheses investigated, four were fully supported (H1, H2, H3, and H5), and one was not (H4). The findings indicated a positive impact of employee engagement on talent retention (H1), a positive impact of employee engagement on talent retention (H2), a positive impact of job embeddedness on talent retention (H3), and job embeddedness mediates the relation between employee engagement and talent retention (H5), while the moderating role of perceived organizational support on the relation between employee engagement and talent retention was rejected (H4).

Recommendations:

These results highlight the alert for the Egyptian petroleum sector organizations to develop strategic recommendations to enhance employee engagement, job embeddedness, and perceived organizational support, which may improve talent retention in the sector organizations such as:

- Offering a competitive compensation package is one of the vital strategies for talent retention within the sector organizations, especially in a high-demand sector like petroleum, and the attractive wave from the competitors in the Gulf area or in Europe is attracting the sector talents. Talented individuals are more likely to remain with an organization that offers competitive compensation reflective of their skills and the current market value. Employees who feel adequately compensated for their work may be less likely to seek opportunities elsewhere.

- Organizations in the Egyptian petroleum sector should focus on enhancing employee engagement strategies, as higher engagement levels are associated with improved retention rates. This could involve initiatives such as employee recognition programs, career advancement opportunities, and adapting a positive workplace culture.
- Reducing formalities can create a more inclusive environment where all employees, regardless of their position, feel comfortable sharing their thoughts and suggestions. This inclusivity may enhance engagement and retention. Organizations should benchmark engagement and retention metrics against industry standards and best practices. This helps identify gaps and areas for improvement.
- Enhancing transparency and positive communication with top management within the sector organizations could improve talent retention. This can be achieved through the establishment of open communication channels, involving employees in the decision-making process as applicable, and providing a transparent, clear path for the employees to be followed and respected without exceptions. In addition, enhancing organizational culture where feedback is respected, which will encourage employees to express their thoughts and ideas without fear of negative consequences, may improve talent retention.
- Organizations in the Egyptian petroleum sector should consider implementing strategies to enhance job embeddedness through organizing regularly team-building events or social gatherings to create a good relationship among employees. This can enhance interpersonal relationships and a sense of belonging. Adapting a culture of transparency where organization goals, changes, and challenges are communicated openly to the employees may enhance their job embeddedness as well, in addition to implementing performance-based incentives that reward employees fairly with transparent rules for their contributions to organizational success, and hence talent retention
- Investing in comprehensive training programs on a transparent basis for employees both locally and abroad to enhance their skills and knowledge to cope with the rapid advancement in technology and to make sure that employees are up to date with the latest update of the technology in their fields. This approach may enhance employee engagement and job embeddedness.
- Organizations in the Egyptian petroleum sector should consider implementing strategies to improve perceived organizational support. The

mean perceived organizational support score of 50.01% indicates that half of employees feel a lack of support from their organizations. Increasing perceived organizational support will be crucial for improving retention rates. This could include transparent communication regarding organizational policies and changes.

Suggestions for Future Research:

The study findings may pave the way for future research exploring specific factors that lead to high engagement among the majority and the barriers faced by the less engaged group within the sector organizations. The study findings could lead to further research exploring specific dimensions of job embeddedness (e.g., links, fit, sacrifice) and how they interact with employee engagement to influence retention in the Egyptian petroleum sector organizations. The findings suggest a need for further research to explore the specific factors that contribute to low perceived organizational support. Understanding these factors can help organizations tailor their support initiatives more effectively. The data could serve as a foundation for further research into specific factors influencing retention, such as job satisfaction, organizational culture, and career development opportunities.

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