



# **Enhancing work engagement through high performance work practices: A Field Study conducted in the ICT sector in Egypt**

submitted by

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# **تعزيز الانخراط الوظيفي من خلال ممارسات العمل عالية الأداء: دراسة ميدانية على قطاع تكنولوجيا المعلومات والاتصالات في**

**مصر**

**إعداد**

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**معهد راية العالي للإدارة والتجارة الخارجية بدهياط الجديدة**

**المنشأ بقرار وزير التعليم العالي رقم ٤٨٩٠ بتاريخ ٢٢ أكتوبر ٢٠١٨ بجمهورية مصر العربية**

## ABSTRACT

Today's organizations have realized that people are their most critical and important resource for achieving success.

To realize their goals, they need engaged employees and consequently, they need to develop and implement effective human resource management systems. This research aimed to investigate the impact

of high-performance work practices (HPWP) on work engagement while considering four sets of practices namely, employment security, employee participation, training and development, and performance-based compensation. For validating the proposed model and the developed research hypotheses, a proportional stratified random sample (385 participants) was drawn from the information and communication technology (ICT) sector in Egypt. Results of the study indicated a strong, positive, and statistically significant relationship between HPWP and work engagement. Additionally, the combined effect of HPWP practices accounts for 49% of variation in employees' work engagement. Finally, findings of this study sets forward a set of practical recommendations that can enhance work engagement.

**Keywords:** HPWS practices, work engagement, employment security, employees' participation, employees' training and development, performance- based compensation.

### المستخلص:

أدركت المؤسسات في الوقت الحاضر أن الأفراد هم المورد الأكثر أهمية وحيوية لتحقيق النجاح. ومن أجل تحقيق أهدافها، فإنها تحتاج إلى موظفين منخرطين في العمل، وبالتالي يجب عليها تطوير وتنفيذ نظم فعالة لإدارة الموارد البشرية. هدفت هذه الدراسة إلى التحقيق في تأثير ممارسات العمل عالية الأداء (HPWP) على الانخراط الوظيفي، مع الأخذ في الاعتبار أربع مجموعات من الممارسات، وهي: أمان التوظيف، مشاركة الموظفين، التدريب والتطوير، والتعويض القائم على الأداء.

ولأغراض التحقق من النموذج المقترح واختبار الفرضيات البحثية المطورة، تم اختيار عينة عشوائية طبقية تراعي التوزيع النسبي مكونة من ٣٨٥ مشاركًا من قطاع تكنولوجيا المعلومات والاتصالات (ICT) في مصر. أظهرت نتائج الدراسة وجود علاقة إيجابية قوية وذات دلالة إحصائية بين ممارسات العمل عالية الأداء والانخراط الوظيفي. علاوة على ذلك، فإن التأثير المشترك لتلك الممارسات يفسر ما نسبته ٤٩٪ من التباين في انخراط الموظفين في العمل. وأخيرًا، تقدم نتائج هذه الدراسة مجموعة من التوصيات العملية التي من شأنها تعزيز الانخراط الوظيفي .

الكلمات المفتاحية: ممارسات العمل عالية الأداء، الانخراط الوظيفي، الأمان الوظيفي، مشاركة الموظفين، تدريب وتطوير الموظفين، التعويض القائم على الأداء .

## Introduction

The global business environment is contemporary landscape for businesses and organizations globally is marked by constant change. Such global trends have placed numerous challenges for organizations striving to create and maintain their competitive advantage. Undoubtedly, this has placed the organization's human resource at the forefront of its resources (Chen et al., 2016; Obeidat, 2020; Manresa et al., 2021). Consequently, successful organizations need to develop and adopt human resource management practices that promotes productivity and performance which ultimately achieves organizational goals. High-performance work practices could be among the possible pathways that would enhance performance and work engagement.

Due to the increasing recognition of the intrinsic value of human resources within businesses and organizations, significant attention has been directed towards the concept of 'work engagement.' This term has captured the interest of numerous researchers, managers, and practitioners globally. However, a substantial debate exists regarding the precise definition of 'work engagement.'

Various definitions have been proposed by researchers, reflecting a lack of consensus among scholars and practitioners, each interpreting the term from their unique perspectives. Furthermore, some researchers have used the terms 'personal engagement,' 'employee engagement,' and 'work engagement' interchangeably, despite their distinct meanings (Geldenhuis et al., 2014; Kim & Park, 2017; Marin, 2021). This has led some scholars to argue that 'engagement' merely represents a rebranding of these synonymous

terms. Additionally, others have noted a conflation of 'work engagement' with other established constructs such as commitment, satisfaction, involvement, and organizational citizenship behavior.

## 2. Literature/theoretical underpinning and hypotheses

This section provides an overview of the theoretical foundation of employee engagement and high-performance work system (HPWP) as well as the development of the research hypotheses.

### **2.1 Work engagement**

Engagement could be broadly defined as a prolonged state of positive emotions characterized by elevated levels of excitement and pleasure (Bakker et al., 2010; Marin, 2021). While many scholars have sought to establish a clear definition of engagement, they have approached it from various perspectives. For instance, some have approached this concept in relation to employee engagement, others have focused on personal engagement, and a third group has emphasized work engagement. According to the first group of researchers, employee engagement is associated with the individuals mental, behavior and emotional status of the individual which aims toward achieving organizational goals and values (Geldenhuys et al., 2014; Kim & Park, 2017; Marin, 2021). On the other hand, work engagement signifies the extent to which individuals are immersed in their job responsibilities and duties, which is closely linked to their performance (Kim & Park, 2017; Mazzetti et al., 2023). In this sense, work engagement is broadly defined as a constructive and fulfilling psychological state related to one's job (Schaufeli et al., 2006; Mazzetti et al., 2023). The current research will concentrate on work engagement only.

Work engagement is dissected into three dimensions, namely vigor, dedication, and absorption (Schaufeli et al., 2006; Coetzee & De Villiers, 2010; Prieto-Díez et al., 2022; Mazzetti et al., 2023). **Vigor** incorporates the physical aspect of work engagement which is characterized by elevated energy levels and physical and mental strength, readiness to exert effort when accomplishing tasks, and the determination to persevere in spite of

challenges (Coetzee & De Villiers, 2010; Htet, 2024). Thus, this dimension is associated with enhanced energy levels, enthusiasm and persistence (Baskar & Indradevi, 2020). On the other hand, ***dedication*** represents the affective side of work engagement and, thus encompasses characteristics such as a sense of significance, efficacy, and inspiration (Coetzee & De Villiers, 2010; Mazzetti et al., 2023; Htet, 2024). In this sense, dedication signifies a profound connection to an employee's professional engagement, thereby highlighting the significance of motivation (Baskar & Indradevi, 2020). Finally, ***absorption*** pertains to the mental dimension of work engagement, including complete focus and an elevated level of concentration during task execution (Coetzee & De Villiers, 2010; Mazzetti et al., 2023; Htet, 2024).

Previous research has concentrated on either investigating the antecedents of work engagement or its consequences. For instance, prior research indicated that work demands and resources are important antecedents of work engagement (Geldenhuis et al., 2014; Miner et al., 2015; Kim & Park, 2017; Van der Walt, 2018). Additionally, organizational climate, leadership, employee relations, employee commitment and employee satisfaction had a positive impact on work engagement (Rožman & Štrukelj, 2020). At the outcome level, work engagement was found to positively affect performance (Hendrik et al., 2021; Neuber et al., 2021), job satisfaction (Noercahyo et al., 2021). Furthermore, work engagement was found to have a negative influence on absenteeism (Neuber et al., 2021).

## 2.2 The relationship between HPWP and work engagement

It is argued that an organization's human resource is a critical source for creating its competitive advantage (Obeidat, 2020; Manresa et al., 2021). As such, many organizations believe that the adoption of high-performance work systems would help them in reducing costs and increasing employee productivity (Bashir et al., 2011; Ogbonnaya & Valizade, 2016; Joseph Tawk, 2021; Manresa et al., 2021). Despite the increasing volume of research in the domain of high performance work systems, yet there is lack of consensus on an accurate definition, characterization, and the optimal combination of practices incorporated in those systems (Waqas, 2017; Manresa et al., 2021). Additionally, there is an ongoing debate on whether to investigate the relationship of high performance work

systems as bundles of practices (Obeidat, 2020; Manresa et al., 2021) or to investigate the influence of specific practices on organizational outcomes (Manresa et al., 2021).

In this respect, High-Performance Work Systems are defined as a complex set of unique yet interconnected innovative workplace practices. These elements are integrated into a cohesive framework designed to effectively select, motivate, and retain a skilled workforce; thereby facilitating the achievement of the organization's strategic goals and objectives (Boxall, 2012; Jyoti & Rani, 2017; García-Chas et al., 2019; Hassett, 2022).

As a result of expected benefits of adopting high performance work practices (HPWP), there is growing interest of investigating the impact of those practices in different geographical contexts and industries (Murphy et al., 2018; Obeidat, 2020). Among the investigations conducted in this area, some researchers found its positive impact on individual and organizational performance (Pascual Ivars & Comeche Martínez, 2015; Robineau et al., 2015; Sikora et al., 2015; García-Chas et al., 2019; Min et al., 2019; Shahzad et al., 2019), enhanced self-esteem (Kloutsiniotis & Mihail, 2018), and fosters employees' creativity (Tang et al., 2017).

In the current research, the researcher adopts the perspective of examining HPWP as a bundle of practices. This approach is grounded on the assertion made by several scholars who argue that organizations should implement suitable combinations of HPWP to reap their synergistic benefits, thereby significantly promoting organizational performance (Kehoe & Wright, 2013; García-Chas et al., 2016; Garg & Punia, 2017; Jyoti & Rani, 2017). This premise is backed by several investigations that showed that by careful selection and execution of HPWP, organizations can boost their workforce capabilities, elevate employee motivation, and foster overall organizational satisfaction. Consequently, these practices are likely to encourage employees to enhance their knowledge, skills, and abilities, while also boosting their self-esteem, creativity, self-confidence, and commitment, and reducing both physical and psychological withdrawal. Ultimately, this leads to improved performance at both the individual and organizational levels (Fabi et al., 2015; Akhtar et al., 2016; Tang et al., 2017; García-Chas et al., 2019; Min et al., 2019; Shahzad et al., 2019;

Obeidat, 2020; Manresa et al., 2021). Based on this, the researcher posited the first main hypothesis:

**H<sub>1</sub>: HPWP has a positive and significant impact on employee engagement**

A critical aspect concerning the successful execution of HPWP is the selection of specific practices included within the bundle of practices. Although there is growing volume of research in the high performance work systems domain, there remains limited consensus on what defines an effective or optimal set of practices (Manresa et al., 2021). Accordingly, there are ongoing discussions concerning which specific practices to integrate into HPWP to foster employee and organizational outcomes. Notably, the most recognized practices include employee selection, training and developing employees, employee participation, internal promotion and merit-based promotions, performance-based compensation systems, and reduction of hierarchal distinction between managerial levels (Lu et al., 2015; García-Chas et al., 2016; Nadeem et al., 2018; Nadeem et al., 2019; Joseph Tawk, 2021).

In the present investigation, the researcher has pinpointed four practices for achieving work engagement: (a) employment security, (b) employee participation, (c) training and development, and (d) performance-based compensation.

**2.2.1 Employment security**

Today business world witness frequent acquisitions, downsizing, mergers, and layoffs. Undoubtedly, this causes employees to experience elevated levels of fear and anxiety concerning their job security, which in turn has detrimental impact on their satisfaction, loyalty (Kundu & Gahlawat, 2016), commitment (Ahmad, 2013), and work engagement (Guarnaccia et al., 2016; Altinay et al., 2019). Consequently, job security has emerged as a paramount concern for human resource management scholars and professionals. In general, job security pertains to an individual's expectation of stability in their employment, thereby reflecting the sense of security employees have regarding their jobs which in turn boosts their expected performance (Htet, 2024). Based on the above arguments and prior research, the researcher posited the following sub-hypothesis

**H<sub>1a</sub>: There is a positive and significant impact of employment security practices on work engagement**



### 2.2.2 Employee participation

Management trends are shaped by economic, political, and legal factors which affect the different participatory practices within organizations. In general, participation is characterized as the act of engaging in activities (Baran & Sypniewska, 2020). Thus, it encompasses both cognitive and emotional engagement within group contexts, thereby fostering the employees contributions towards achieving collective goals (Akhtar et al., 2016; Aqeela & Vivek, 2018). As such, the core principle of participation is to grant employees increased authority and responsibilities which is expected to boost employee satisfaction and organizational effectiveness. In this sense, employee participation is dependent on the degree and level of participation that an organization offers to its employees (Baran & Sypniewska, 2020), and thus could be delineated into involvement, contribution, and acceptance of responsibilities (Akhtar et al., 2016; Aqeela & Vivek, 2018). Several studies indicated the critical role of employee participation practices on work engagement (Baran & Sypniewska, 2020; Husin et al., 2021). Based on the above argument and previous research findings, the researcher posited the following sub-hypothesis:

**H<sub>1b</sub>: There is a positive and significant impact of employee participation practices on work engagement**

### 2.2.3 Training and development

In contemporary organizations, it is often essential for employees to possess a combination of technical and interpersonal skills to effectively perform their responsibilities. Offering both structured and unstructured training opportunities can significantly enhance an employee's growth. As such, training and development practices are regarded as crucial elements of high- performance work systems. It is argued that employees' developmental opportunities are critical for enhancing skills, knowledge, and competencies. This is simply because they enable employees to acquire new skills, knowledge and capabilities, thereby promoting the performance, motivation and effectiveness. Furthermore, training encourages continuous learning among employees, which in turn reinforces desired behaviors and attitudes (Hassett, 2022). In this respect, several empirical studies revealed

a positive and significant influence of training and development on work engagement (Mugizi et al., 2020; Chovarda & Theriou, 2021; Hassett, 2022; Salunkhe et al., 2024).

Accordingly, the researcher posited the following sub-hypothesis:

**H<sub>1c</sub>: There is a positive and significant impact of training and development practices on work engagement**

#### **2.2.4 Performance-based compensation**

Performance appraisal is essential in establishing a just compensation framework. In general, performance appraisal involves the assessment of employees' performance, the communication of this information to the employees, and the exploration of methods to enhance their performance. This indicates that it is a systematic approach for evaluating performance and delivering feedback that facilitates performance improvements. Consequently, when a compensation system is informed by performance appraisal data, it tends to be more equitable for both employees and organizations.

Employees are incentivized to enhance their performance, as higher performance correlates with increased compensation for their efforts, expertise, and time. This motivation can lead to greater productivity.

Conversely, organizations stand to gain from this approach, as improved performance can lower fixed costs per unit, thereby reducing overall costs. This reduction can lead to lower prices for products or services, which may boost sales volume and profitability. Therefore, implementing a performance-based compensation system can result in higher employee satisfaction, commitment, loyalty, and retention within organizations (Dessler, 2011; Ivancevich & Konopaske, 2013). Based on the above argument, the research posited the following sub-hypothesis:

**H<sub>1d</sub>: There is a positive and significant impact of performance-based compensation practices on work engagement**

### **3. Research problem**

Although work engagement has become a major concern for most of the organizations worldwide considering it as a key driver of organizational success and sustainability. Many firms in the ICT sector continue to experience low levels of work engagement, affecting its

productivity, job satisfaction, creativity and innovation and retention. At the same time, high-performance work practices (HPWPs) have been identified as potential enhancers of engagement and extensively linked to positive employee outcomes in global contexts. However, still there is a noticeable lack of empirical evidence in emerging economies such as Egypt especially applied on ICT sector that is characterized by being highly competitive and dynamic.

Therefore this research seeks to address the gap by investigating the extent to which HPWPs influence employee engagement in the Egyptian ICT sector, thereby offering practical insights for human resource development and sustainable organizational performance.

#### **4. Research questions**

Based on the previously mentioned research problem and hypotheses, the research seeks to answer the main question: *What is the direct impact of HPWP on work engagement within the ICT sector in Egypt?* From the main question, the following sub-questions are derived:

- a) What is the direct impact of employment security practices on work engagement within the ICT sector in Egypt?
- b) hat is the direct impact of employee participation practices on work engagement within the ICT sector in Egypt?
- c) What is the direct impact of training and development practices on work engagement within the ICT sector in Egypt?
- d) What is the direct impact of performance-based compensation practices on work engagement within the ICT sector in Egypt?
- e) Which component of HPWPs has the greatest impact on work engagement within the ICT sector in Egypt?

#### **5. Research Objectives :**

To develop a deep understanding of the issue under investigation, this research aims to:

- Investigate the impact of High Performance Work Practices (HPWPs) on employee work engagement within the ICT sector in Egypt.
- Specify which HPWPs including ( employment security practices, employee participation practices, training and development practices and performance-based compensation practices) significantly contribute to enhancing work engagement.
- Provide ICT sector in Egypt with practical recommendations on designing effective HR strategies aimed at fostering employee engagement.

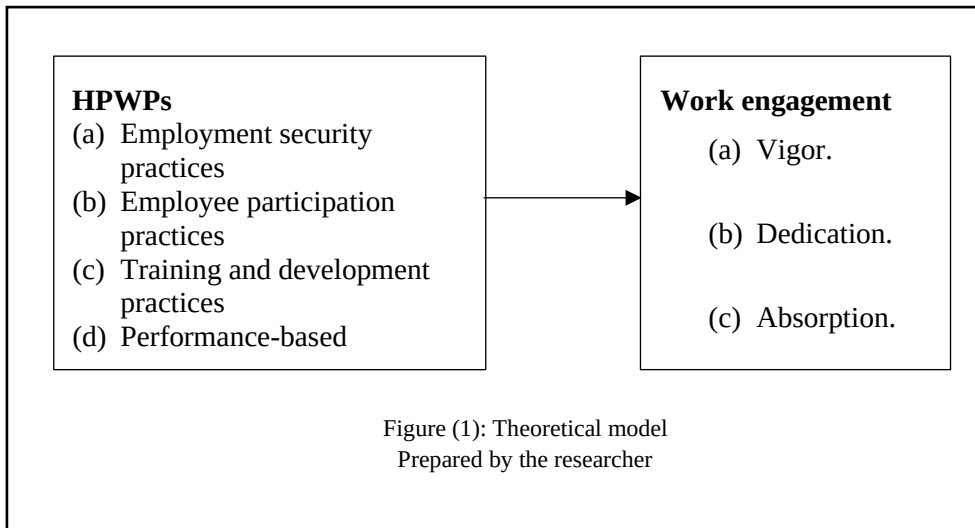
#### **6. Research importance:**

Enhancing work engagement through high performance work practices possess critical importance on both theoretical and practical levels.

- Highlight the importance of enhancing work engagement which is considered nowadays as one of the critical factors that influence organizational performance, innovation and creativity and employee retention "key triggers for the success of any organization especially operating in a highly competitive working environment ).
- Enhance theoretical frameworks of HPWPs. As most of the conducted research supporting the relationship between HPWPs and work engagement is found to be applied in developed economies. Accordingly, this research helps to expand theoretical frameworks by exploring this relationship in emerging markets such as Egypt (which is different in term of culture, structure and economic conditions) applied to one of the highly evolving industries namely, ICT sector.
- Help HR practitioners and decision makers to prioritize high performance work practice strategy through providing practical recommendations for ICT organizations on HR strategies that can nurtures employee engagement.

#### **7. Research Model**

Based on the previously mentioned literature review and developed hypotheses, the researcher suggests the following theoretical model that aims to illustrate the relationship between HPWPs (as independent variable) and work engagement (as dependent variable) as indicated in figure (1).



## 8. Empirical investigation

This section is dedicated to the analysis of the empirical investigation as well as testing the hypothesis.

### 8.1 Population and sampling

The present empirical study was carried out within the information and communication technology (ICT) sector in Egypt. A proportional random sampling method was utilized, employing the classification of companies by employee count as defined by the Information Technology Industry Development Agency (IDITA). According to IDITA's online database, the total workforce in this critical sector is approximately 115,720 employees. From this population, a proportional stratified random sample of 385 employees was determined. It is important to note that participation in the survey was voluntary, and respondents were assured of the complete confidentiality and anonymity of their answers.

### 8.2 Measurement Instruments

All research variables were assessed using validated measurement tools that employed a 5-point Likert scale, with responses ranging from '1' indicating complete disagreement to '5' indicating complete agreement. Given that all participants were Egyptians, a specialist

in organizational behavior translated the questionnaire into Arabic. The measurement tools employed in this study include:

- a) Work engagement: Utrecht Work Engagement Scale was utilized developed by (Schaufeli et al., 2002). The scale includes nine items that measure the three dimensions of work engagement namely, vigor, dedication, and absorption.
- b) HPWP: Delery and Doty (1996) was adopted. Here, four items for each of the selected dimensions – employment security, employee participation, training and development, and performance-based compensation - were used. "Performance appraisals are based on objective" (Delery & Doty, 1996, p. 834) is an example of the included statement for performance-based compensation

### 8.3 Testing reliability and validity

Evaluating the measurement tool is essential for assessing the effectiveness and consistency of the measure. An examination of Table (1) regarding reliability revealed that all latent constructs met the minimum threshold of 0.70 for Cronbach's alpha ( $\alpha$ ). Similar findings were noted in the validity assessments, where all latent constructs satisfied the minimum criteria for extracted variance of 0.70 (Hair Jr et al., 2010).

| <b>Variables</b>                         | <b>Mean</b> | <b>SD</b> | <b><math>\alpha</math></b> | <b>Validity</b> |
|------------------------------------------|-------------|-----------|----------------------------|-----------------|
| High performance work practices.         | 3.211       | 0.81      | 0.81                       | 0.90            |
| Employment security practices            | 3.212       | 0.91      | 0.87                       | 0.93            |
| Employees' participation practices       | 3.320       | 0.85      | 0.86                       | 0.93            |
| Training & development practices         | 3.112       | 0.90      | 0.92                       | 0.96            |
| Performance-based compensation practices | 3.212       | 0.93      | 0.92                       | 0.96            |
| Work engagement practices                | 3.332       | 0.98      | 0.89                       | 0.94            |

### 8.4 Descriptive statistics

The response rate reached 100%, with 385 respondents, revealed a gender distribution of that 79.60% for males and 20.40% for females. The difference between genders was not statistically significant ( $p\text{-value} > 0.05$ ), with both groups demonstrating above-average scores (means exceeding 3.00) across the two research variables. Regarding

educational qualifications, the sample included individuals with below a university degree (1.5%), a bachelor's degree (83.5%), and postgraduate degrees (15.0%). As with the gender analysis, no significant differences were found ( $p\text{-value} > 0.05$ ).

### 8.5 Hypothesis testing

For testing the proposed hypotheses, Pearson Correlation method was employed to examine the relationship between the independent and dependent variables. As revealed in table (2), the correlation matrix provided offers valuable insights into the bivariate relationship between the latent constructs.

| Table (2) Pearson Correlation Coefficients (r)                                                                                                                                                                                                          |          |         |         |         |          |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|---------|---------|----------|-------|
| Variable                                                                                                                                                                                                                                                | 1        | 2       | 3       | 4       | 5        | 6     |
| HPWP                                                                                                                                                                                                                                                    | 1.000    |         |         |         |          |       |
| Employment security practices                                                                                                                                                                                                                           | 0.432**  | 1.000   |         |         |          |       |
| Employee participation practices                                                                                                                                                                                                                        | 0.411*   | 0.395*  | 1.000   |         |          |       |
| Training and development practices                                                                                                                                                                                                                      | 0.402**  | 0.341*  | 0.244*  | 1.000   |          |       |
| Performance-based compensation practices                                                                                                                                                                                                                | 0.492**  | 0.431** | 0.342*  | 0.422*  | 1.000    |       |
| Work engagement                                                                                                                                                                                                                                         | 0.508*** | 0.509** | 0.511** | 0.488** | 0.531*** | 1.000 |
| (***) = $P < 0.001$ , (**) = $P < 0.01$ , (*) = $P < 0.05$<br>1: HPWP, 2: employment security practices, 3: employee participation practices, 4: training and development practices,<br>5: Performance-based compensation practices, 6: work engagement |          |         |         |         |          |       |

An analysis of the correlation matrix indicated:

- A positive, strong and statistically significant relationship between HPWP and work engagement ( $r=0.508$ ,  $p\text{-value} < 0.001$ ). Consequently,  $H_1$  was verified.
- A positive, strong and statistically significant influence of employment security practices on work engagement ( $r=0.509$ ,  $p\text{-value} < 0.01$ ). thereby justifying  $H_{1a}$ .
- That similar results were found in the impact of employee participation practices on work engagement as well as the influence of training and development practices on work engagement ( $r=0.511$ ,  $p\text{-value} < 0.01$ ,  $r=0.488$ ,  $p\text{-value} < 0.01$  respectively), and thus  $H_{1b}$  and  $H_{1c}$  were supported.

- A strong, positive, and statistically significant relationship between performance-based compensation practices and work engagement ( $r=0.531$ ,  $p\text{-value}<0.001$ ). Accordingly,  $H_{1d}$  was justified.

In conjunction to the usage of Pearson Correlation and for the purpose of deep testing and analysis for the relationship between the independent and dependent variables, Multiple Regression is used to determine the coefficient of determination ( $R^2$ ). The results of this analysis are presented in Table 3.

**Table (3) Multiple regression statistics for the variables affecting work engagement**

| Variables                         | SD   | Reg. Coef ( $\beta_i$ ) | T value | Sign. level |
|-----------------------------------|------|-------------------------|---------|-------------|
| Employment security               | 0.92 | 0.452                   | 3.46    | 0.001       |
| Employees participation           | 0.89 | 0.446                   | 3.55    | 0.01        |
| Employees training & development. | 0.91 | 0.392                   | 3.46    | 0.001       |
| Performance-based compensation.   | 0.93 | 0.520                   | 3.56    | 0.001       |

|             |               |             |                    |
|-------------|---------------|-------------|--------------------|
| Total Model | $R^2 = 0.490$ | $F = 15.41$ | Sign. Level = 0.01 |
|-------------|---------------|-------------|--------------------|

The results in table (3) showed that:

- The standardized regression coefficients (Beta weights) for HPWP practices namely, employees participation, employment security, employees training & development, and performance based compensation closely mirror the patterns observed in the Pearson correlation coefficients ( $r$  values) reported earlier in Table 2. This consistency reinforces the strength and direction of the identified relationships.
- Additionally, regression analysis results demonstrated that HPWP practices is strongly and significantly impact work engagement where:
  - employment security (  $\beta_1=0.452$  at sign 0.001)
  - employees' participation (  $\beta_2=0.446$  at sign. 0.01)
  - employees' training & development (  $\beta_3=0.392$  at sign.0.001)
  - performance-based compensation (  $\beta_4=0.520$  at sign. 0.001)



- HPWPs operate jointly and explain **49%** of work engagement variation since ( $R^2$ ) was equal 0.490 and  $P < 0.01$ .

These findings highlight the significant explanatory power of the HPWP practices in relation to dependent variable (work engagement).

## 9. Discussion

The current research aimed at examining the direct impact of HPWP on work engagement within the ICT sector in Egypt. While doing so, four bundles of HPWP practices were considered namely, employment security practices, employee participation practices, training and development practices, and performance-based practices. Based on Pearson Correlation and multiple regression results, all posited hypotheses were justified. Based on the empirical study, several results could be inferred.

The interrelationship between the four bundles of HPWP exhibited a positive, strong and statistically significant correlation with HPWP. Notably, the highest correlation was observed in performance-based compensation practices ( $r=0.492$ ,  $p\text{-value}<0.01$ ). Furthermore, this bundle of practices demonstrated a positive, strong, and statistically significant correlation with employment security practices ( $r=0.431$ ,  $p\text{-value}<0.001$ ). Conversely, while still statistically significant, the weakest correlation was identified between training and development practices and employee participation practices. Based on those findings, it could be argued that there is synergistic effect between the investigated bundles of practices (Kehoe & Wright, 2013; García-Chas et al., 2016; Garg & Punia, 2017; Jyoti & Rani, 2017).

The relationship between HPWP and work engagement exhibited a positive, strong, and statistically significant correlation with work engagement ( $r=0.508$ ,  $p\text{-value}<0.001$ ). The researcher believes that there is a synergistic effect of the different bundles on work engagement. However, it was noted that performance-based compensation practices had the strongest influence on work engagement ( $r=0.531$ ,  $p\text{-value}<0.001$ ). The significance of performance-based compensation practices could be attributed to several factors:

- Firstly, performance-based systems often clarify expectations, reduce ambiguity, and increase employee focus.

- Secondly, it is perceived as a crucial component of effective and equitable compensation framework. In other words, compensation is based on the contribution of the employee.
- Finally, linking pay to performance incentivizes an employee to put more effort, thereby increasing work engagement.

The relationship between employee participation practices and work engagement ranked second among the investigated sets of practices ( $r=0.511$ ,  $p\text{-value}<0.01$ ). The results of the present study is aligned with the studies of Baran and Syoniewska (2020) and Husin et al. (2021). Here, the researcher argues that this could reflect a sense of ownership over outcomes because employees who are involved and have a say in decisions feel valued which in turn increases their intrinsic motivation and reinforces work engagement.

The correlation between employment security practices demonstrated a positive, strong, and statistically significant association with work engagement ( $r=0.508$ ,  $p\text{-value}<0.01$ ). The current study results are consistent with the findings of Guarnaccia et al. (2016) and Altinay et al. (2019). The researcher believes that these outcomes may be linked to the trust employees have in their organizations' management, which is likely to enhance their loyalty and increase their engagement in their roles. Furthermore, employment security practices contribute to a sense of job security among employees, thereby reducing stress and encouraging greater emotional investment in their work.

Finally, though training and development practices had a positive, strong and statistically significant association with work engagement, it demonstrated weakest correlation among the practices examined ( $r=0.488$ ,  $p\text{-value}<0.01$ ). The result of the current study delivered consistent results with several previous studies (Mugizi et al., 2020; Chovarda & Theriou, 2021; Hassett, 2022; Salunkhe et al., 2024). The researcher argues that the impact of training on work engagement may not be immediate, as the skills acquired through such programs may require time to be fully developed and utilized. Additionally, while training may be beneficial, work engagement may be more significantly influenced by promotion opportunities rather than solely by the learning process.

## 10. Implications and recommendations

The present empirical study has provided significant insights into the relationship between HPWP and work engagement while considering four sets of practices namely, employment security practices, employee participation practices, training and development practices, and performance-based compensation practices. Furthermore, it attempted to address the existing research gap regarding employees' perceptions of HPWS practices and their associated attitudinal and behavioral outcomes, particularly within the ICT sector in Egypt.

The findings affirmed a positive, strong and statistically significant impact of HPWPs including the aforementioned sets of practices – on work engagement. Additionally, the combined effect of HPWPs accounts for 49% of variation in employees' work engagement.

Consequently, the researcher has proposed several recommendations that underscore the theoretical and practical implications of the findings.

Additionally, this research will provide organizational management with valuable empirical insights into the effective implementation of human resource practices across various service sectors and cultural contexts. Moreover , the researcher urges employers to consider both cognitive and behavioral aspect when developing human resource management practices, a critical factor for organizational success, particularly within a rapidly changing global business environment.

Finally, based on the research findings and from the researcher perspective, the following recommendations are suggested to translate empirical insights into practical interventions that enhance work engagement and enrich human resource contribution. Proposed recommendations include:

*Addressing employment security by:*

- Providing long term workforce planning that will give employees sense of stability and promote loyalty .

- Ensuring the application of different safety programs like medical insurance and return to work programs that enhance employee's physical and psychological health, reduce absenteeism and increase morale.
- Considering flexible work arrangements (including reduced working hours, part timers, remotely work) to ease work life balance and boost engagement.
- Ensuring transparent and fair implementation of policies regarding bonuses and promotions among all employees to reduce the feeling anxiety, stress and dissatisfaction that in turn adversely affects performance and productivity.
- Adequately complying with national labor laws and regulations in cases of layoffs and dismissals.

Emphasizing Employee Participation :

- By encouraging employees to participate in decision-making processes and actively involving and empowering them , where employees feel that they are valued, respected and have the willingness to contribute more to innovative ideas by capturing and sharing different perspectives and increase their sense of ownership and belonging to their organizations .
- Furthermore, promptly share goals and knowledge to ensure transparency among the employees , encourage collaboration and build a positive working environment.

Actively invest in training and development:

- By providing tailored ongoing training and development programs to enhance employees' knowledge, skills and abilities and support their development and growth through workshops, job rotation, mentorship and other learning processes.

Focusing on performance based compensation

- By Extensively focusing on rewarding employees for their contributions, as it always serve as a catalyst that can boost work engagement. HR can utilize different sources of intrinsic and extrinsic motivators such as feeling of accomplishment, recognition , rewards and promotions.
- Conducting regular performance appraisals and provide continuous and constructive feedback to employees on their progress to motivate and enhance their performance.

**11. Limitations**

This research provides significant insights into the influence of HPWP on work engagement. Nonetheless, it is crucial to recognize several limitations:

Firstly, the results are confined to the ICT sector in Egypt, which considerably limits their generalizability to other sectors and global contexts .

Secondly, being a cross-sectional study provides a limited view of the phenomena under study that restricts the capacity to observe behavioral changes over time.

Additionally, common method bias may compromise the reliability of the results.

Lastly, it is essential to consider that other confounding variables could affect the conclusions derived from this study.

## 12. Future research

Future researches should be devoted for exploring and analyzing the mediating influence of organizational culture on the relationship between HPWP and work engagement.

Additionally, it is recommended that researchers investigate the mediating effects of work engagement on the relationship between HPWP and workforce agility.

Further research could also investigate this relationship on different industries that could help in generalizability of the results.

Additional researches could also examine the moderating effects of age, experience, and education on the connections between HPWP and work engagement.

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