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The Mediating Effect of Job Satisfaction on the Relationship between Digital Connectivity and Job Performance

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Abstract

This dissertation aims to investigate the extent to which Digital Connectivity affects Job Performance, directly and through the mediation role of Job Satisfaction among employees in Egyptian private engineering consultancy companies. Building on Maslow's Theory of Motivation/Satisfaction, the Conservation of Resources Theory, and the Job Demands-Resources Model, a questionnaire is distributed on a sample of employees to test the proposed hypotheses. The sample size used for analysis and interpretation consists of 412 respondents. Hypothesis testing is used to test the research hypotheses to conclude probabilistic statements about population parameters. Structural Equation Modeling technique is adopted to explore complex relationships among variables. The results suggest that increased Digital Connectivity is associated with higher levels of Job Performance and Job Satisfaction. Also, increased Job Satisfaction is associated with higher levels of Job Performance. Furthermore, Job Satisfaction has a mediating effect on the relationship between Digital Connectivity and Job Performance. This research recommends organizations in this industry to promote Digital Connectivity among employees, by facilitating access to relevant technologies and fostering a digital-friendly work environment. As such, organizations may be able to enhance employee performance in their assigned job roles. No studies have been found addressing the impact of Digital Connectivity on Job Performance in this context, thus the research contributes to a better understanding of how Digital Connectivity affects Job Performance.

Keywords

Digital Connectivity, Job Performance, Job Satisfaction, Maslow's Theory,

Conservation of Resources, Job Demands-Resources Model

1. Overview

1.1. Introduction

Employees are currently facing challenges to retain their jobs, under the high competition, the severe economic situation caused by COVID-19, which "evolved in December 2019 and reached its peak in January 2022" (World Health Organization, 2022), in addition to the recent Russia-Ukrane war that broke out in February 2022. Under these circumstances, employers expect more and more from the employees, especially with the availability of Information and Communications Technology (ICT) facilities, whether hardware such as smart phones, laptops, notebooks, etc., or software facilitating communications such as Outlook, Messenger, WhatsApp, Microsoft Teams, Zoom, etc. These facilities enable employees' reachability to perform additional work after official working hours, on vacations, or even during shopping. ICT tools have become an integral component of our lives, enabling individuals to seamlessly cross the work/life border with minimal effort (Tennakoon, 2021). This can be referred to as the widespread use of digital technologies for work-related matters during non-work time, termed digital connectivity (DCON) (Ren et al., 2022). The technological features of DCON enhance employees' availability, reachability, and responsiveness to others' needs (Hoeven et al., 2016). The performance implication of DCON for employees and organizations is the most crucial dependent variable at work (Campbell & Wiernik, 2015). Job performance (JP) is a broad construct that includes in-role (i.e., performance of standard tasks and job activities) and extra-role (i.e., discretionary behaviors not required, yet beneficial for organizational effectiveness) performance (Bateman & Organ, 1983). The researcher concludes the importance of investigating the impact of DCON on in-role JP in the context of Egyptian private engineering consultancy companies.

1.2. Pilot Study

In order to check whether this current research problem exists or not, within the Egyptian private engineering consultancy companies, a number of 10 employees at different functional levels are interviewed as follows; 3 employees from the Business Development Function, 2 employees from the Operations Function, 2 employees from the Human Resources Function and 2 employees from the Finance Function, and one employee from the Marketing Function. A non-structured interview is used for this purpose, the results indicate that top management staff, line managers, supervisors, etc. assume that DCON has a positive impact on in-role employee JP. They expect higher performance levels form their sub-ordinates, with the availability of all digital devices in hand at all times (e.g., laptops, mobiles, etc.), and all possible applications and software facilitating work connectivity, and high-

er employee reachability, online meetings, mailing work platforms, etc. (e.g., teams, Google, etc.). On the other hand, at the sub-ordinate level, the results of the interviews show that when the employee experiences DCON, she/he recognizes the importance of his/her role, and builds expectations of future returns, such as getting raises, promotions, recognition, etc., which altogether lead to his/her job satisfaction (JS), on a resource-gain pathway, leading to higher JP. However, this is limited to a point where the employee suffers excessive DCON, leading to lower JP.

1.3. Previous Studies

Due to the influence of technological innovations and the growth of mobile computing, scholars have suggested that distinctions between work and non-work time are becoming blurred (Kaufman-Scarborough, 2006). In recent years, there has been an enormous increase in the variety of technology mediated communication devices such as laptops and handheld gadgets (e.g., wireless email and telephony devices, personal digital assistants, pagers, and Bluetooth and mobile applications) that enable individuals to connect to the office at any time and from anywhere (Hill et al., 2006). Wireless technology-mediated communication devices, or Wireless Enabled Devices (WED), were designed to make communicating across time and geographic boundaries easier, causing these boundaries to virtually disappear. From the employer perspective, there is a belief that nomadic computing practices facilitate collaboration and increase productivity among workers by removing temporal and spatial barriers (Lyytinen & Yoo, 2001). In contrast, from an employee perspective, the boundaries of time and space that traditionally provided a clear demarcation between work and non-work time are vanishing (Jarvenpaa et al., 2010). Continuous connectivity makes individuals feel as if they are always "on call" (Tarafdar et al., 2007). Up to the researcher's knowledge, no studies have focused on the impact of DCON on JP in Egypt and particularly in the private sector engineering consultancy companies. Hence, this research is undertaken to cover this gap.

1.4. Research Question

Based on the pilot study and the previous studies described hereinabove, the research problem is identified as follows:

- To what extent does DCON affect JP among the employees in the Egyptian private engineering consultancy companies? And to what extent does JS mediate the relationship between DCON and JP in the same context.

It is worth mentioning that it is challenging to find research specifically on DCON. The term "digital connectivity" comes with several synonyms, (e.g. work-related extended availability, digital device use during non-work time, digital technologies during and after-work, work connectivity behavior after-hours, etc.), all of which represent the same concept, which is working after work hours under the availability of ICT facilities.

1.5. Research Objectives

The objectives of this research are as follows:

- To investigate the extent to which in-role JP of the employees in the Egyptian private engineering consultancy companies is impacted by DCON. Specifically, the research aims to explore how DCON influences employees' ability to effectively carry out their job responsibilities and achieve desired performance outcomes.
- To investigate the mediating role of JS on the relationship between DCON and in-role JP. JS is considered to operate on a resource-gain pathway, meaning that higher levels of job satisfaction may amplify the effects of DCON on JP.

The research aims to shed light on the mechanisms through which DCON and JS interact and collectively impact employees' in-role JP in the context of Egyptian Private Engineering Consultancy Companies. The findings will provide valuable insights into how DCON and JS jointly contribute to employees' in-role JP. This knowledge can inform organizations and policymakers how to handle digital connectivity strategies to improve employees' job performance in the Egyptian Private Engineering Consultancy Companies.

2. Literature Review and Research Hypothesis Development

2.1. Introduction

The office worker of today inhabits a work environment that is very different to that of his/her predecessor. Formerly, communication was limited to face-to-face interaction, landline telephone discussion and hardcopy letters and memos stored in physical filing systems. By contrast, the contemporary knowledge worker is confronted with a multiplicity of communication media. In addition to the aforementioned communication modes, employees typically now access email, instant messaging and voice over internet protocol via a desktop and/or laptop computer, and also have at least one mobile device facilitating voice communication, text messaging and email. Information communicated via these multiple channels can be stored in various in-boxes, voicemail-boxes and other electronic storage systems. The work ecology, suffused with these various devices and applications, forms an environment thick with communication media (Wajcman & Rose, 2011). According to (Boswell et al., 2016), it is an understatement to say that technology has changed the nature of work. Electronic communication and the mobility afforded via technologies with internet capabilities have fundamentally changed when, where, and how work gets done. One substantive change is employees becoming more and more tethered to their workplace even when they leave the office for the day or during vacations and other non-working days. This has led to the phenomenon of "the new night shift," when employees "log back on to work" (or never log off) to check and respond to emails and texts.

2.2. Digital Connectivity

ICTs refer to technologies that allow one to gather, store and spread information such as smartphones and computers (Steinmuller, 2000), which are now an integral part of the modern workplace. Accordingly, research in organizational science demonstrates a plethora of advantages linked to advances in ICTs such as increased access to information (Morgan et al., 2000), greater flexibility (Arvanitis & Loukis, 2009), improved communication between organizational members (Dewett & Jones, 2001), and increased efficiency and productivity (Pilat, 2005). The widespread use of digital technologies for work-related matters during nonwork time is termed DCON (Ren et al., 2022). A number of other terms have been used in this context, including "technology-assisted supplemental work" (Fenner & Renn, 2010), "extended availability for work" (Dettmers et al., 2016). Another term is work connectivity behavior after-hours (WCBA), which refers to "an organization member's use of portable wireless enabled devices (laptop or handheld) to engage with work or work-related colleagues during non-work time (e.g. mornings before work, evenings after work, weekends, or vacations)" (Richardson & Benbunan-Fich, 2011).

The many ICT evolutions of the past few decades—such as internet access everywhere and affordable smartphones, laptops and personal computers—have made our lives easier in many respects, but have also blurred the lines between different life domains. Due to this blurring of boundaries, it has become harder for many people to disconnect and recover from work outside work hours, a trend which has been linked to risks like work-to-home conflict, stress and mental illness. On the other hand, it is argued that some employees may prefer to finish up work tasks even if it is after hour (rather than to leave tasks unfinished till the next working day) and for them, work-related ICT-use outside work hours may facilitate rather than complicate closure from work (Ninaus et al., 2015).

DCON is the main independent variable adopted in this research, to investigate its impact on the JP of the employees in the Egyptian private engineering consultancy companies.

2.3. Job Satisfaction

JS is an attitude or emotional response to one's job, work environment or according to Herzberg's two-factor theory, the contents of the job including achievement, responsibility, and recognition are the factors, which motivate the workers and cause high levels of job satisfaction (Tirmizi et al., 2007). People bring with them certain drives and needs that affect their performance. Therefore, understanding how needs stimulate performance and how rewards on such performance lead to the job satisfaction is indispensable for the managers (Newstrom, 2007).

In 1959, Frederick Herzberg, a behavioural scientist proposed a two-factor theory or the motivator-hygiene theory. Herzberg classified these job factors into

two categories: Hygiene factors and Motivational factors. Hygiene factors are those job factors which are essential for existence of motivation at workplace. These factors include pay, company policies and administrative policies, fringe benefits, physical working conditions, status, interpersonal relations, and job security. On the other hand, motivational factors yield positive satisfaction. These factors include recognition, sense of achievement, growth and promotional opportunities, responsibility, and meaningfulness of the work (Juneja, 2008).

2.4. Job Performance

Individual JP should be defined as things that people actually do, actions they take, that contribute to the organization's goals (Campbell & Wiernik, 2015). Employees typically engage in two sorts of performances: in-role and extra-role performance. In-role or task performance is defined as those officially required outcomes and behaviors that directly serve the goals of the organization (Motowidlo & Van Scotter, 1994). Among other things, in-role performance includes meeting organizational objectives and effective functioning (Behrman & Perreault, 1984). Extra-role or contextual behavior is defined as employees' discretionary and voluntary behaviors that are believed to directly promote the effective functioning of an organization, without necessarily influencing a person's target productivity directly (Mackenzie et al., 1991).

Some top factors that affect work performance are job satisfaction, employee engagement, training and development, the right tools for the job, and company culture and work environment. Leadership, employee's knowledge, skillset matching job responsibilities and fair compensation contribute to job satisfaction. Employee engagement increases when they feel acknowledged and appreciated for their contributions, when team members are committed to collaboration within and outside their department, and when there is a sense of community among team members and the company. Training and development improve new hires qualifications. Being provided with the proper tools helps employees perform not only better but faster. Company culture sets procedural and behavioral norms within an organization, including policies, goals, attitudes, and expectations. Work environment can improve performance through clean and tidy space and furnishings, comfortable levels of temperature, air quality, lighting, and noise, and employee ability to personalize their workspace (Cmoe, 2023).

JP is the main dependent variable adopted in this research, to investigate the extent to which it is impacted by the DCON of the employees in the Egyptian private engineering consultancy companies.

2.5. Empowerment/Enslavement Paradox

There are two contrasting perspectives about the potential consequences of staying available for work during non-work time, labelled the "Empowerment/Enslavement Paradox". First, ICT use can empower employees by facilitating

work-life balance through increased flexibility and control (Jarvenpaa & Lang, 2005), which are job characteristics associated with higher levels of work satisfaction, health and well-being (Costa et al., 2006), and reduced work-life conflict (Hill et al., 2010). In contrast, use of ICT can make employees "slaves" by electronically "tethering" them to work 24/7 (Jarvenpaa & Lang, 2005), decreasing flexibility and control (Day et al., 2010). Such constant availability for work could blur work-life boundaries and limit employees' capacity to "switch off" and recover (Zijlstra et al., 2014), resulting in reduced well-being (Day et al., 2010). According to (Boswell & Olson-Buchanan, 2007), CT may become what previous researchers have suggestively termed as the "electronic leash," tying employees to and reducing employee disengagement from their work.

2.6. Relationship between Digital Connectivity and Job Performance

States of connectivity are important because they help us address and understand the impact of too much or too little connectivity on performance and productivity (Kolb et al., 2012). According to (Fender, 2010), being responsive during non-work time has been associated with increased self-reported performance. However, empirical studies have supported the idea that psychological detachment from work during off-hours is beneficial for workers' well-being and for various aspects of job performance (Sonnentag, 2012). Psychological detachment is related to various facets of job performance, such as task performance (i.e., fulfilling explicit task requirements) and proactive work behavior (i.e., addressing problems at work and coming up with solutions for them). A study in which weekly surveys were collected over the course of four workweeks revealed that when employees detached from their job during the weekend, they felt more refreshed at the beginning of the next workweek and showed more proactive work behavior throughout the week (Binnewies et al., 2010). Another study, however, suggested that psychological detachment might be beneficial only up to a certain point. Fritz et al. (2010) reported a curvilinear relation between psychological detachment, on one hand, and task performance and proactive work behavior on the other: Based on the literature and the pilot study, the researcher predicts following hypothesis:

H_1: There is a negative relationship between DCON and in-role JP of the employees in the Egyptian Private Engineering Consultancy Companies.

2.7. Relationship between Digital Connectivity and Job Satisfaction

The advancement of information technologies, the expansion of communication apps, and the availability of smartphones, computers, and internet access have allowed employees to stay connected to work even after working hours (Gadeyne et al., 2018). There may exist both positive and negative influencing paths through which WCBA affects JS (Schlachter et al., 2018). Hence, from the prac-

tical point of view, it is of great importance to find out the boundary conditions under which WCBA would less negatively influence JS or more positively affect JS (Cheng et al., 2021). Although WCBA may affect JS in both positive and negative ways, we assume that the relationship between them may be negative on the whole. That is, WCBA may do JS more harm than good. More and more countries as well as companies have realized the costs of keeping employees constantly responsive during nonwork hours and taken measures to control it. For instance, France enacted a law to protect employees' right to disconnect (Morris, 2017). Based on the literature and the pilot study, the researcher predicts following hypothesis:

H_2: There is a negative relationship between DCON and JS of the employees in the Egyptian Private Engineering Consultancy Companies.

2.8. Relationship between Job Satisfaction and Job Performance

(O'Leary et al., 2008) argue that JS is generally conceived as a feeling of fulfilment or enjoyment which people derive from their jobs and is positively related to employee health and job performance. JS also indicates a good relationship with staff and colleagues, control of time off and adequate resources. According to (Gunlu et al., 2010), to accomplish customer satisfaction, the JS of employees in the organization is necessary. Employees who experience JS are likely to execute their duties well, leading to high performance and efficient service, which will directly increase the productivity of the organization (Gunlu et al., 2010). Job satisfaction has a significant positive correlation with job performance, if employees with higher score on job satisfaction; they also have higher job performance. That means the more satisfied with work they are, the higher job performance they have (Sun, 2016).

Based on the literature and the pilot study, the researcher predicts following hypothesis:

H_3: There is a positive relationship between JS and JP of the employees in the Egyptian Private Engineering Consultancy Companies.

2.9. Conservation of Resources Theory

The Conservation of Resources (COR) theory begins with the tenet that individuals strive to obtain, retain, foster, and protect those things they centrally value. At its core, COR theory is a motivational theory that explains much of human behavior based on the evolutionary need to acquire and conserve resources for survival, which is central to human behavioral genetics. Like other social animals, humans must acquire and conserve both personal strengths and social bonds. Unlike other animals, however, humans can create complex tools to ensure their survival and have the advantage of complex language to communicate, which aids survival and social bonding. Thus, people employ key resources not only to respond to stress, but also to build a reservoir of sustaining resources for times of future need. Furthermore, the obtaining and retaining of

personal, social, and material resources creates in people, families, and organizations the sense that they are capable of meeting stressful challenges (Hobfoll et al., 2018).

To relate the theory to the research; although detachment from work may intuitively seem undesirable from a managerial perspective and may seem unnecessary from an employee perspective, studies have repeatedly demonstrated that employees need time away from work for recovery to occur (Sonnentag, 2012). Psychological detachment during leisure time provides a much-needed temporary break from job demands, which in turn could improve engagement. When individuals are able to detach from work, work-related demands no longer drain resources. In fact, resources may be conserved, allowing workers to return to work in a fully recovered state the next morning and fit to cope with new work demands (Sonnentag et al., 2010). Resources follow the rule of replacement, so people invest current resources to gain new ones that assist goal attainment (Hobfoll et al., 2018). Individuals exchange nonwork time and extra attention in DCON to develop other resources that could be beneficial. However, as DCON increases, they reach a point where they have consumed significant time, attention, and other current resources, and further investment may lead to fewer or even negative returns (Hobfoll & Freedy, 1993). Since imbalances between resource gain and loss may influence JP, employees engage in a certain level of DCON, at which more resources could be gained than lost. In this case, JP benefits. But when DCON exceeds this level, resources could be lost. In this case, JP is harmed. In this research, JS will be taken as a mediating variable on a resource gain path, as per the following hypothesis:

H_4: JS mediates the relationship between DCON and JP of the employees in the Egyptian Private Engineering Consultancy Companies.

2.10. Maslow's Theory of Motivation/Satisfaction (1943)

Maslow's hierarchy of needs is the most widely known theory of motivation and satisfaction (Kaur, 2013). Maslow argued that individual motivational needs could be ordered as in a hierarchy. Some needs take precedence over others. Once a need is satisfied, it no longer motivates the person; Maslow identified five levels of needs; physical needs, safety needs, social needs, esteem/achievement needs and self-actualization.

An individual's needs are influenced by the importance attached to various needs, and the level to which an individual wants to fulfill these needs. (Saif, Nawaz, Jan, & Khan, 2012) indicate that Maslow's theory of the hierarchy of needs was the first motivation theory that laid the foundation for the theories of JS. This theory serves as a good start from which researchers can explore the problem of JS in different work situations.

To relate the theory to the research; the rationale behind the theory is that it can suggest to managers how they can make their employees or subordinates self-actualized. This is because self-actualized employees are likely to

work at their maximum creative potential. Therefore, it is important to make employees achieve this state by helping them to meet their needs (Patricia & Asoba, 2021).

As such these subordinates are likely to work at their maximum creative potential, leading to higher JP. The theory relates to the researcher prediction that the overall JS of the employee is positively related to his/her JP, as per hypothesis H_3.

2.11. Job Demands-Resources Model

The Job Demands-Resources Model (JD-R) model posits that employees are exposed to physical, psychological, social, and organizational aspects of the working environment that can be categorized as either demands or resources. Job demands refer to any aspects of the job (e.g., workload, time pressure, emotionally taxing social interactions, loud noises) that require extended physical or psychological effort on the part of the employee and that are associated with increased physical and psychological costs (Demerouti et al., 2001). Conversely, the work environment also includes a number of physical, psychological, social, and organizational aspects (e.g., job control, social support, task variety, and compensation) of the job that encourage employee health and productivity. These job resources assist employees with the completion of their work, reduce the burden of job demands, and can promote personal growth and development (Bakker & Demerouti, 2007). Thus, the basic premise of the JD-R model is that working conditions can act as either demands or resources for employees, with job demands depleting employees' physical and psychological reserves and job resources motivating and engaging employees, which may also produce a buffering effect against experiencing high demands (Day et al., 2010).

In this research, the JD-R model is used to explain how positive work outcomes represented by high JP can be the product of various work aspects including JS (as a positive aspect) through hypothesis H_3.

2.12. Conceptual Framework

In this research, a theoretical model that offers a precise understanding of how and why DCON is expected to affect JP is developed and tested. Maslow's Theory of Motivation/Satisfaction (1943), and the COR theory are referred to, in order to explain the influences of DCON on JP through the mediating effect of JS.

DCON is considered as a resource investment behavior that employees undertake to enable goal attainment according to the COR theory. Using Maslow's Theory, DCON is argued to increase JS (on a resource-gain path), which would support job performance. Yet with excessive use of DCON, it would consume valuable resources, (on a resource-loss path), which would harm JP. According to the JD-R model, JS is primarily related to job resources motivating and engaging employees.

2.13. Research Model

See Figure 1.

2.14. Research Hypotheses

Hypothesis H_1: There is a negative relationship between DCON and in-role JP of the employees in the Egyptian Private Engineering Consultancy Companies.

Hypothesis H_2: There is a negative relationship between DCON and JS of the employees in the Egyptian Private Engineering Consultancy Companies.

Hypothesis H_3: There is a positive relationship between JS and JP of the employees in the Egyptian Private Engineering Consultancy Companies.

Hypothesis H_4: JS mediates the relationship between DCON and JP of the employees in the Egyptian Private Engineering Consultancy Companies. Please open comment.

3. Research Methodology

3.1. Research Approach

For this research a quantitative approach is the most appropriate choice, where qualitative research is adopted first in the pilot study to explore the said relationship, followed by quantitative methods to test that model empirically through hypothesis testing. The design is based on explanatory approach. This research is deductive as the research process starts with an established theory, based on the literature review, which is tested using the collected data. This research is cross sectional where the data collection took place once from April 2023 till June 2023.

3.2. Research Population and Sampling

Unit of Analysis: The unit of analysis in this research is the individual employee in the Egyptian private engineering consultancy companies.

Population: The participants in this research are employees working in Egyptian Private Engineering Consultancy Companies. The sample includes individuals from various levels within the companies' hierarchy, encompassing employees of different ages and varying levels of working experience. To recruit participants, the researcher leverages the existing professional networks and selects individuals who meet the criteria specified for this research.

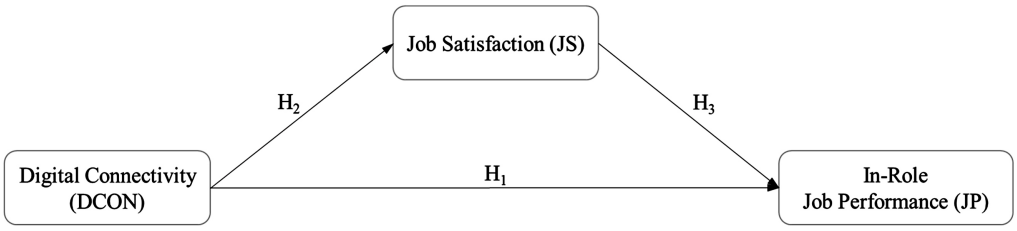

Figure 1. Proposed research model.

By including participants from different hierarchical levels, age groups, and varying levels of experience, the research aims to capture a comprehensive understanding of the phenomenon under investigation.

Population Size: According to the Fifth Economic Census conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS) in Egypt for the year 2017/2018, there is a total of 1856 Egyptian Private Engineering Consultancy Companies, employing approximately 39,611 individuals. Hence, this current research population size is 39,611 elements.

Sample Size: Krejcie and Morgan's (1970) formula is employed to determine the appropriate sample size. With a confidence level of 95% and a margin of error of 5%, the needed sample size is 380 respondents.

Sampling Technique: Probability sampling approach through simple random sampling is used since it involves random selection, allowing for strong statistical inferences about the whole group (McCombes, 2022), for the well-defined population.

3.3. Data Collection

This research utilizes the survey strategy, and a structured questionnaire is specifically designed as an instrument to collect primary data to measure the respondent's perception on the research variables, to test the research hypotheses and obtain the desired results.

The JP and JS questionnaires depend on existing instruments (standardized questionnaire), selected since they are found reliable and valid. The DCON questionnaire is adapted by the researcher to suit Egyptian norms, based on habits and activities performed by Egyptians, etc. Validity and reliability of the questionnaire is reinvestigated during data analysis. Likert scale 5/7 questions are used to measure the respondent's attitude and to determine the extent to which they agree or disagree with a particular question or statement (Formplus, 2022). Data is collected for statistical analysis through SurveyMonkey software. The questionnaire is developed in English and translated into Arabic using the backward translation process.

Digital Connectivity: The scale developed by Richardson and Benbunan-Fich (2011), and further used by (Ren, Hu, Tang, & Chadee, 2022) is adapted in this current research to the specific context of DCON for the employees in the Egyptian private engineering consultancy companies. The scale measures the use of communication technologies after work hours by asking respondents to report the frequency on a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = very often, 5 = always) with which they use an array of communication technologies to perform their job during nonwork hours. Respondents assessed the use of smart phones, laptops to respond to work emails and to access company digital platform to perform job-related duties during 20 stated events. Using one-dimensional approach/one construct (dimension), participants are asked to indicate how often they use these technologies to perform job-related tasks and activities, on 20

items (e.g., logging onto a network server to perform work, responding to work emails, communicating with clients or colleagues at work, etc.) during specific off-hours contexts, (e.g., while shopping, while on vacation, across the weekend or traveling, while doing sport, while dining, etc.). The used scale has a reported Cronbach's alpha α of 0.93 for reliability, and r = 0.59 for validity (Richardson & Benbunan-Fich, 2011).

Job Satisfaction: JS is measured in this current research using The Generic Work Satisfaction Scale, developed by Mac Donald and MacIntyre (1997). The used scale is one of the few instruments developed to measure satisfaction within one-dimensional approach/one construct (dimension). This scale provides valid and reliable scores with only 10 items (De Andrade, Omar, & Salessi, 2020). The scale measures the JS of the respondents by asking them to report their level of agreement on a 5-point Likert scale (1 = Totally disagree, 2 = Disagree, 3 = Neither agree or disagree, 4 = Agree, 5 = Totally agree), on 10 items (e.g., "In my work I can apply all my talents and skills", etc.). The scale has a reported Cronbach's alpha α of 0.77 for reliability, while principal components analysis (PCA) proved the scale valid (Mac Donald & MacIntyre, 1997).

Job Performance: Using three-dimensional approach/three constructs (dimensions), JP is measured in this current research using Individual Work Performance Questionnaire (IWPQ), developed by Koopman. This is an 18-item scale developed in The Netherlands to measure the three main dimensions of job performance: task performance, contextual performance, and counterproductive work behavior (Ramos-Villagrasa et al., 2019). The scale measures the JP of the respondents via their responses on the 18 items on a 5-point Likert scale (1 = seldom to 5 = always for task and contextual performance; and 1 = never to 5 = often for counterproductive work behavior), on 10 items (e.g., "In my work I can apply all my talents and skills", etc.). The IWPQ has adequate reliability ranging from 0.74 to 0.85 (Koopmans, Bernaards, Hildebrandt, de Vet, & van der Beek, 2014).

4. Data Analysis and Research Findings

4.1. Collected Data

As the needed sample size is 380 respondents, a number of 1200 questionnaires are distributed to the target sample, yielding 400 complete responses, with response rate about 33.3%. Investigating the collected responses, 90 responses are excluded from the analysis due to quality concerns. In order to ensure a robust and reliable analysis, and aiming for a larger sample size, further to the previously submitted 1200 questionnaires, additional 400 questionnaires are distributed, and a total of 523 responses are successfully obtained with total response rate about 32.7%. After careful evaluation, a total of 111 responses are excluded from the analysis. Therefore, the final sample size used for analysis and interpretation consists of 412 respondents, representing individuals from various le-

vels within the companies' hierarchy, encompassing employees of different ages and varying levels of working experience. This increased sample size contributes to the statistical validity of the findings and ensures a more comprehensive representation of the population under study.

4.2. Structural Equation Modeling

Structural Equation Modeling (SEM) is a widely accepted statistical technique utilized across various research fields to explore intricate relationships among variables and evaluate theoretical models. Partial Least Squares (PLS) is a popular approach within SEM, particularly suitable for predicting latent constructs and when dealing with smaller sample sizes. In this research, SEM-PLS is employed as the analytical framework, to investigate the associations among the designated variables. To conduct the SEM-PLS analysis, the SmartPLS 4 software tool is utilized. SmartPLS 4 is known for its comprehensive and user-friendly features, empowering researchers with advanced capabilities. By employing PLS, any limitations imposed by normality assumptions can be overcome, enabling more accurate data analysis and fostering a comprehensive understanding of the factors influencing employee JP within the research context. The modelling process is undertaken in two main stages; Stage 1: Measurement Model Assessment, and Stage 2: Structural Model Assessment.

4.3. Stage 1: Measurement Model Assessment

Factor Loadings

Factor loadings indicate the strength and direction of the relationship between observed variables and their corresponding latent factors. As suggested by (Pett et al., 2003), factor loadings range from −1.0 to +1.0, with higher absolute values indicating a stronger correlation between the item and the underlying factor. To evaluate the quality of factor loadings in this research, the recommended threshold of 0.50 is used, as proposed by (Hair et al., 2016). Any factor loading below this threshold would suggest a weak relationship between the item and the factor, possibly requiring the exclusion of that item from the analysis. The specific factor loadings for each item can be found in **Table 1**. During this research, a challenge is encountered where several items exhibited factor loadings below 0.50. However, considering their theoretical significance and alignment with the dimension they represent and its loading greater than 0.2 (Child, 2006), a decision is made to retain these items in our analysis. Consequently, the following items are removed from further consideration: (16-Being in a mosque or church for praying) and (19-Paying a visit to the restroom) from the DCON construct and (28-I think working is good for my health) from the JS construct. After careful treatment of these low-loading items and their subsequent removal, a re-evaluation of the factor loadings is conducted. As a result, the adjusted loadings now satisfy the assessment criteria. **Table 2** presents the final factor loadings of the revised measurement model.

Table 1. Factor loadings.

	Digital Connectivity	Job Satisfaction	Task Performance	Contextual Performance	Counterproductive work Behavior
q0001	0.450				
q0002	0.499				
q0003	0.549				
q0004	0.486				
q0005	0.464				
q0006	0.528				
q0007	0.606				
q0008	0.631				
q0009	0.516				
q0010	0.456				
q0011	0.587				
q0012	0.641				
q0013	0.732				
q0014	0.704				
q0015	0.407				
q0016	0.354				
q0017	0.666				
q0018	0.493				
q0019	0.472				
q0020	0.387				
q0021		0.539			
q0022		0.640			
q0023		0.784			
q0024		0.635			
q0025		0.703			
q0026		0.495			
q0027		0.673			
q0028		0.002			
q0029		0.550			
q0030			0.760		
q0031			0.778		
q0032			0.728		

Continued

q0033		0.796		
q0034		0.764		
q0035			0.472	
q0036			0.664	
q0037			0.782	
q0038			0.829	
q0039			0.780	
q0040			0.716	
q0041			0.773	
q0042			0.631	
q0043_r				0.548
q0044_r				0.647
q0045_r				0.792
q0046_r				0.775
q0047_r				0.826

Table 2. Factor loadings—revised.

	Digital Connectivity	Job Satisfaction	Task Performance	Contextual Performance	Counterproductive work Behavior
q0001	0.448				
q0002	0.499				
q0003	0.560				
q0004	0.484				
q0005	0.440				
q0006	0.517				
q0007	0.602				
q0008	0.625				
q0009	0.525				
q0010	0.446				
q0011	0.603				
q0012	0.644				
q0013	0.738				
q0014	0.708				
q0015	0.409				
q0017	0.665				

Continued

q0018	0.504				
q0020	0.376				
q0021		0.534			
q0022		0.635			
q0023		0.786			
q0024		0.644			
q0025		0.701			
q0026		0.505			
q0027		0.682			
q0029		0.551			
q0030			0.760		
q0031			0.777		
q0032			0.732		
q0033			0.796		
q0034			0.760		
q0035				0.473	
q0036				0.664	
q0037				0.783	
q0038				0.830	
q0039				0.779	
q0040				0.716	
q0041				0.773	
q0042				0.628	
q0043_r					0.544
q0044_r					0.648
q0045_r					0.792
q0046_r					0.774
q0047_r					0.828

Multicollinearity Indicator

To assess the presence of multicollinearity among the indicators, the Variance Inflation Factor (VIF) statistics is employed, as recommended by (Fornell & Bookstein, 1982). Multicollinearity refers to high correlations between independent variables, which can lead to inflated standard errors and unstable coefficient estimates. According to the suggestion by (Hair et al., 2016), VIF values below 5 indicate acceptable levels of multicollinearity. According to **Table 3**, all

Table 3. Multicollinearity statistics (VIF) for indicators.

	VIF
q0001	1.238
q0002	1.347
q0003	1.578
q0004	1.324
q0005	1.538
q0006	1.468
q0007	1.702
q0008	1.595
q0009	1.532
q0010	1.346
q0011	1.556
q0012	1.653
q0013	2.300
q0014	2.182
q0015	1.186
q0017	1.759
q0018	1.512
q0020	1.215
q0021	1.221
q0022	1.373
q0023	1.808
q0024	1.455
q0025	1.582
q0026	1.465
q0027	1.625
q0029	1.253
q0030	1.595
q0031	1.587
q0032	1.649
q0033	1.823
q0034	1.696
q0035	1.207
q0036	1.574

Continued

q0037	3.194
q0038	3.632
q0039	1.996
q0040	1.817
q0041	2.118
q0042	1.409
q0043_r	1.190
q0044_r	1.372
q0045_r	1.770
q0046_r	1.690
q0047_r	1.687

VIF values are below the threshold, indicating the absence of significant multicollinearity among the indicators. Thus, the independence of the indicators is preserved, and the coefficient estimates obtained from the analysis are reliable.

Reliability Analysis

Assessing the reliability of a measuring instrument is crucial to evaluate its stability and consistency. In this research, Cronbach's Alpha and Composite Reliability (CR) are employed. Cronbach's Alpha assesses the internal consistency of a scale by measuring the correlation between items within a construct. CR considers the factor loadings of the indicators to evaluate the reliability of the construct. According to **Table 4**, the obtained Cronbach's Alpha values ranged from 0.771 to 0.865, indicating satisfactory internal consistency for the constructs. Furthermore, the CR ranged from 0.842 to 0.890, providing further support for the reliability of the constructs. Both the Cronbach's Alpha and CR values exceed the recommended threshold of 0.70, as suggested by Hair et al. (2011).

Validity

Convergent Validity: Construct validity confirms the alignment among multiple measures of the same concept. Convergent validity, in particular, examines the agreement between different measures of the same construct. It is the extent to which the construct converges in order to explain the variance of its indicators (Hair et al., 2016). In this research, convergent validity is assessed using the Average Variance Extracted (AVE) statistic. As recommended by Fornell and Larcker (1981), an AVE value equal to or greater than 0.50 indicates that the items converge to measure the underlying construct, thus establishing convergent validity. The results in **Table 5** reveal that DCON and JS have slightly low AVE values. However, the CR values for all constructs exceeded the threshold of 0.70. This suggests that the constructs still demonstrate sufficient reliability and internal consistency.

Table 4. Constructed reliability analysis.

	Cronbach Alpha	Composite Reliability
Digital Connectivity	0.865	0.885
Job Satisfaction	0.786	0.842
Task Performance	0.824	0.876
Contextual Performance	0.858	0.890
Counterproductive work Behavior	0.771	0.844

Table 5. Constructed convergent validity (AVE).

	Average Variance Extracted (AVE)
Digital Connectivity	0.306
Job Satisfaction	0.404
Task Performance	0.586
Contextual Performance	0.510
Counterproductive work Behavior	0.526

Discriminant Validity: In this research, multiple approaches are utilized to evaluate discriminant validity, such as the Fornell and Larcker criterion, cross-loadings, and the Heterotrait-Monotrait Ratio (HTMT).

Fornell and Larcker (1981) Criterion: This criterion states that discriminant validity is achieved when the square root of the AVE for a construct exceeds its correlation with other constructs. The findings, presented in **Table 6**, demonstrate that the square root of the AVE for each construct surpasses its correlation with other constructs. Thus, it is concluded that discriminant validity is successfully established for all constructs in this research.

Cross Loadings: this is a valuable technique for determining the degree to which items belonging to a particular construct exhibit stronger loadings on their intended construct rather than on other constructs in the research (Wasko & Faraj, 2005). The results in **Table 7** reveal that all items display stronger factor loadings on their intended constructs compared to other constructs in the research. This finding is consistent with the research conducted by Wasko & Faraj (2005), who emphasize the significance of items loading more strongly on their intended constructs. Thus, it is concluded that discriminant validity is successfully established in this research.

Heterotrait-Monotrait Ratio (HTMT): is used to evaluate discriminant validity by estimating the correlation between constructs. It compares the correlation between constructs to the correlation between indicators within the same construct (Hair, Hult, Ringle, & Sarstedt, 2016). Ideally, the HTMT ratio should be lower for inter-construct correlations compared to intra-construct correlations; however, Kline (2011) suggests a threshold of 0.85 or less, while Teo et al. (2008) propose a more lenient threshold of 0.90 or less. The results in **Table 8** indicate

Table 6. Discriminant validity—Fornell and Larcker criterion.

	Digital Connectivity	Job Satisfaction	Task Performance	Contextual Performance	Counterproductive work Behavior
Digital Connectivity	**0.554**	0.177	0.215	0.293	0.035
Job Satisfaction	0.177	**0.636**	0.079	0.214	0.251
Task Performance	0.215	0.079	**0.765**	0.593	0.145
Contextual Performance	0.293	0.214	0.593	**0.714**	0.089
Counterproductive work Behavior	0.035	0.251	0.145	0.089	**0.725**

Bold represents the square root of AVE.

Table 7. Discriminant validity—Cross loadings.

	Digital Connectivity	Job Satisfaction	Task Performance	Contextual Performance	Counterproductive work Behavior
q0001	**0.448**	0.032	0.122	0.180	0.014
q0002	**0.499**	0.074	0.058	0.109	0.001
q0003	**0.560**	0.151	0.163	0.148	0.060
q0004	**0.484**	0.111	0.095	0.163	−0.080
q0005	**0.440**	−0.078	0.090	0.065	−0.073
q0006	**0.517**	0.003	0.084	0.132	−0.077
q0007	**0.602**	0.018	0.114	0.125	0.058
q0008	**0.625**	0.070	0.122	0.144	−0.007
q0009	**0.525**	0.089	0.082	0.086	0.054
q0010	**0.446**	0.068	0.111	0.094	0.012
q0011	**0.603**	0.186	0.085	0.199	0.050
q0012	**0.644**	0.067	0.118	0.282	0.024
q0013	**0.738**	0.163	0.164	0.247	0.054
q0014	**0.708**	0.141	0.168	0.211	0.033
q0015	**0.409**	0.129	0.110	0.097	0.010
q0017	**0.665**	0.085	0.086	0.145	−0.009
q0018	**0.504**	0.146	0.147	0.125	0.113
q0020	**0.376**	0.029	0.146	0.144	−0.064
q0021	0.024	**0.534**	0.110	0.143	0.210
q0022	0.073	**0.635**	0.088	0.151	0.133

Continued

q0023	0.148	**0.786**	0.064	0.162	0.205
q0024	0.192	**0.644**	0.050	0.128	0.114
q0025	0.128	**0.701**	0.064	0.206	0.165
q0026	0.092	**0.505**	−0.072	0.032	0.135
q0027	0.080	**0.682**	0.017	0.105	0.135
q0029	0.143	**0.551**	0.016	0.098	0.160
q0030	0.146	0.112	**0.760**	0.330	0.136
q0031	0.214	0.060	**0.777**	0.460	0.127
q0032	0.153	0.001	**0.732**	0.432	0.074
q0033	0.158	0.025	**0.796**	0.537	0.099
q0034	0.143	0.095	**0.760**	0.520	0.108
q0035	0.168	0.085	0.361	**0.473**	−0.042
q0036	0.173	0.128	0.435	**0.664**	−0.016
q0037	0.188	0.210	0.487	**0.783**	0.096
q0038	0.251	0.221	0.500	**0.830**	0.139
q0039	0.252	0.122	0.421	**0.779**	0.045
q0040	0.204	0.165	0.372	**0.716**	0.037
q0041	0.230	0.140	0.441	**0.773**	0.067
q0042	0.197	0.118	0.354	**0.628**	0.131
q0043_r	−0.049	0.146	−0.018	−0.065	**0.544**
q0044_r	0.021	0.125	0.124	0.075	**0.648**
q0045_r	0.060	0.169	0.141	0.098	**0.792**
q0046_r	−0.025	0.177	0.110	0.096	**0.774**
q0047_r	0.082	0.256	0.137	0.086	**0.828**

Bold represents factor loadings on their intended constructs.

Table 8. Discriminant validity—HTMT.

	Digital Connectivity	Job Satisfaction	Task Performance	Contextual Performance	Counterproductive work Behavior
Digital Connectivity					
Job Satisfaction	0.222				
Task Performance	0.246	0.127			
Contextual Performance	0.316	0.244	0.712		
Counterproductive work Behavior	0.141	0.306	0.183	0.154	

that the HTMT ratio for each pair of constructs is below the recommended threshold of 0.90. This suggests that the correlation between constructs is lower compared to the correlation within constructs, providing evidence in support of discriminant validity.

Validating Reflective-Reflective Higher Order Construct—Job performance

To validate the reflective-reflective higher-order construct (HOC) of JP in this research, assessments of factor loadings, reliability, and validity measures are conducted as presented in Table 9. The factor loadings of all indicators for JP surpass the minimum acceptable value of 0.50, indicating a strong relationship between the indicators and their respective constructs. Although Counterproductive Work Behavior has a factor loading slightly below 0.5, it is decided not to remove it as its exclusion would not significantly improve reliability. Reliability analysis confirms that JP exhibits reliability statistics, indicating good internal consistency and reliability. Convergent validity is established by examining the AVE for the higher-order constructs, even though it shows slightly lower values. However, the CR values for all constructs exceed 0.70, providing additional support for the convergent validity of the constructs.

To evaluate discriminant validity, two approaches are utilized: comparing the correlations among the latent variables with the square root of AVE and employing the HTMT ratio, as presented in Table 10. The results indicate that the

Table 9. Factor loading, reliability and AVE for HOC.

		Factor Loading	Alpha	CR	AVE
Job Performance	Task Performance	0.848	0.853	0.877	0.319
	Contextual Performance	0.918			
	Counterproductive Work Behavior	0.287			

Table 10. Discriminant validity.

HTMT			
	DCON	JS	JP
DCON		0.222	0.328
JS	0.222		0.298
JP	0.328	0.298	
Fornell and Larcker Criterion			
	DCON	JS	JP
DCON	**0.549**	0.195	0.283
JS	0.195	**0.635**	0.261
JP	0.283	0.261	**0.553**

Bold represents the square root of AVE.

square root of AVE for each construct exceeds its correlation with other constructs. Furthermore, the HTMT ratio for all pairs of constructs is below the threshold of 0.90, providing evidence of discriminant validity. Thus, it can be asserted that the higher-order constructs of JP exhibit strong validity in this research.

4.4. Stage 2: Structural Model Assessment

This analysis enables us to assess the connections between the latent constructs and validate the hypotheses put forward in the research. Through the examination of path coefficients (β) and their statistical significance, significant insights can be derived regarding the relationships and the overall suitability of the model. In this research, the hypotheses are tested in a one-tailed manner, specifically emphasizing the positive direction of the relationships. To assess the statistical significance of these relationships, techniques such as bootstrapping are employed. Furthermore, the assessment of effect sizes is conducted to gain insights into the magnitude or strength of the relationships. By considering effect sizes, the practical importance and impact of the independent variables on the dependent variable in the model can be determined. To assess the overall fit of the structural model, several goodness-of-fit measures are utilized, including the coefficient of determination R^2 and the Q^2 value. The R^2 indicates the proportion of variance explained in the endogenous constructs, providing an indication of the model's explanatory power. A higher R^2 value suggests a stronger ability of the model to account for the variability in the dependent variable. Q^2 value evaluates the predictive relevance of the model. It compares the observed data with the predicted values derived from the model and assesses whether the model has meaningful predictive power. A positive Q^2 value suggests that the model can predict the endogenous construct beyond chance, indicating its predictive relevance.

Direct Relationships Assessment

The results in Table 11 provide evidence of the relationships between the constructs in the research. The β-values indicate the magnitude and direction of the relationships. The t-values assess the significance of the path coefficients. The *p*-values < 0.05 indicate a significant relationship.

Mediation Analysis

The mediation analysis conducted in this research aims to investigate the mediating role of JS in the relationship between DCON and in-role JP in the context of Egyptian private engineering consultancy companies. One hypothesis is tested: H_4, proposing that JS mediates the relationship between DCON and JP. The results provided in Table 12 reveal that the total effect of DCON on JP is significant (β = 0.283, $t = 4.581$, $p < 0.001$), indicating a direct positive influence of DCON on JP without considering the mediator. When JS is included as a mediator, the direct effect of DCON on JP remains significant (β = 0.243, $t = 3.527$, $p < 0.001$), suggesting that the relationship between DCON and JP is partially mediated by JS.

Table 11. Results of the structural model assessment—direct relationships.

Hypotheses					β	SE	t	*p*	Results
H1	:	DCON	→	JP	0.243	0.069	3.527	0.000*	partially supported
H2	:	DCON	→	JS	0.195	0.055	3.559	0.000*	partially supported
H_3	:	JS	→	JP	0.153	0.059	2.581	0.005*	Supported

β = Path Coefficient, SE = Standard Error, t = t-Statistics, P = Probability value, *Relationships are significant at $p < 0.05$.

Table 12. Total effect, direct effect, and Indirect effect for the model mediation.

Total effects				Direct effect				Indirect Effect						
β	SE	t	P	*β*	SE	t	P		β	SE	t	*p*	Percentile bootstrap 95% CI	
													Lower	Upper
0.283	0.062	4.581	0.000*	0.243	0.069	3.527	0.000*	JS	0.030	0.015	1.928	0.027*	0.004	0.052

β = Path Coefficient, SE = Standard Error, t = t-Statistics, P = Probability value, *Relationships are significant at $p < 0.05$.

Explanatory Power

Cohen (1988) guidelines are employed to interpret the R^2 values, where values of 0.26 or higher are considered substantial, 0.13 are considered moderate, and 0.02 are considered weak. However, it is important to note that acceptable R^2 values can vary depending on the research context. The results in Table 13 indicate that the R^2 value is 0.144, which is above 0.13. This suggests a moderate explanatory power of the model, indicating a reasonable level of explanation. However, the R^2 value for the JS model is only 0.038, which falls within the weak range. This suggests that the exogenous variables in the model explain a relatively small amount of variance in JS, indicating a limited explanatory power for this specific construct.

In PLS path modeling, the f^2 effect size is calculated by comparing the variation in squared correlation values when an independent variable is excluded from the model. Values of 0.35 or higher indicate a high impact, 0.15 indicate a medium impact, and 0.02 indicate a small impact (Cohen, 1988). The results indicate that f^2 values ranged from 0.022 to 0.066, which is considered medium impact.

Q^2 evaluates the predictive power of a latent variable by comparing observed data with predicted values derived from the model. Higher Q^2 values indicate better predictive power and suggest that the model captures a substantial portion of the variance in the endogenous construct. Typically, Q^2 values that are significantly greater than zero signify that the model has meaningful predictive power. The Q^2 value of the model is 0.061 suggesting that the model has some level of predictive relevance, as it explains a portion of the variance in the endogenous constructs beyond what would be expected by chance. However, it is important to note that the Q^2 values indicated weak predictive power.

Table 13. Explanatory power.

Predictor(s)	Outcome(s)	R square	f square	Q square
Digital Connectivity	Job Satisfaction	0.038	0.039	0.024
Digital Connectivity	Job Performance	0.144	0.066	0.061
Job Satisfaction			0.022	

5. Discussion, Recommendations and Conclusions

5.1. Discussion

Based on the analysis results, the following conclusion can be drawn:

Hypothesis 1, which proposed a negative relationship between DCON and in-role JP of employees in Egyptian private engineering consultancy companies, is partially supported by the statistical analysis ($\beta = 0.243$, $t = 3.527$, $p = 0.000$). The results indicate a statistically significant but positive relationship between DCON and in-role JP. Contrary to the hypothesis, the findings suggest that increased DCON is associated with higher levels of in-role JP in the same context.

The results are consistent with some previous research; according to Kolb et al. (2012), states of connectivity are important because they help us address and understand the impact of too much or too little connectivity on performance and productivity. The finding suggesting that increased DCON is associated with higher levels of in-role JP may be contributed to the importance of being responsive during non-work time, since it has been associated with increased self-reported performance (Fender, 2010). Also, other studies suggested that psychological detachment might be beneficial only up to a certain point. For example, Fritz et al. (2010) reported a curvilinear relation between psychological detachment, on one hand, and task performance and proactive work behavior on the other.

However, the results are different from some previous research. For example, other research have supported the idea that psychological detachment from work during off-hours is beneficial for workers' well-being and for various aspects of JP (Sonnentag, 2012), and that when employees detached from their job during the weekend, they felt more refreshed at the beginning of the next workweek and showed more proactive work behavior throughout the week (Binnewies et al., 2010).

Furthermore, the COR theory proposes that resource investment does not always lead to anticipated returns (Halbesleben & Buckley, 2004). Resources follow the rule of replacement, so people invest current resources to gain new ones that assist goal attainment (Hobfoll et al., 2018). Individuals exchange nonwork time and extra attention in DCON to develop other resources that could be beneficial. However, as DCON increases, they reach a point where they have consumed significant time, attention, and other current resources, and further investment may lead to fewer or even negative returns (Hobfoll & Freedy, 1993).

In a study undertaken by Donaldson and Grant-Vallone (2002), JP, among

other variables, was analyzed through self and co-worker reports. While it was impossible to obtain the truth about employee JP, and the like, the "true state of affairs" for other variables, such as employee height and weight, could be determined. The results of the study suggest that self-report bias tends not to be uniform across constructs assessed in psychological research conducted in business settings.

The research findings indicating a statistically significant and positive relationship between DCON and in-role JP can have some justifications. First, the research population could have reached an increased level of DCON, but not to the point where they have significantly consumed their resources and investment, and therefore could not encounter negative returns, represented by low JP. Second, the instrument taken to measure the JP, is a self-reported tool, where the target employees self-assess their JP, which might lead to self-report bias.

Hypothesis 2, which proposed a negative relationship between DCON and JS of employees in Egyptian private engineering consultancy companies, is partially supported by the statistical analysis ($\beta = 0.195$, $t = 3.559$, $p = 0.000$). The results indicate a statistically significant but positive relationship between DCON and JS. Contrary to the hypothesis, the findings suggest that increased DCON is associated with higher levels of JS in the same context.

The results are consistent with some previous research, for example, Sonnentag (2001) states that the advantages of being connected can increase one's work satisfaction because one can be more productive and solve work-problems as they arise, even while away from the work site, or after work hours. Also, Wajcman and Rose (2011) state that while connectivity appears to offer people a greater degree of flexibility and control over when and where they do their work. The widespread use of mobile work devices (MWDs), e.g., laptops and smartphones, enables constant connectivity to work (Büchler et al., 2020). Also, constant connectivity may offer greater control over when and where employees work (Chesley, 2005). Since employees are able to stay on top of work demands for most of the day, this may explain why CT use was associated with higher work satisfaction (Diaz et al., 2012). Bolli and Pusterla (2022) found that digitalization increases JS among employees particularly by increasing work productivity, making work more interesting, and fostering interactions with coworkers and supervisors. According to Castellacci and Tveito (2018) theoretical model, digitalization increases efficiency and frees up time. Thus, it has an effect on JS through change in time use.

Referring to the 'Empowerment/Enslavement Paradox'; a theory concerned about the potential consequences of staying available for work during non-work time, the results support the first perspective of the theory, which states that ICT use can empower employees by facilitating work-life balance through increased flexibility and control (Jarvenpaa & Lang, 2005), considered job characteristics associated with higher levels of work satisfaction, health and well-being (Costa et al., 2006), and reduced work-life conflict (Hill et al., 2010).

However, the results challenge the second perspective of the "Empowerment/Enslavement Paradox" theory, pointing out that use of ICT can make employees "slaves" by electronically "tethering" them to work 24/7 (Jarvenpaa & Lang, 2005), thus decreasing flexibility and control (Day et al., 2010).

This current research findings indicating a statistically significant but positive relationship between DCON and JS can have some justifications. First, the widespread use of mobile work devices, e.g., smartphones and laptops, in addition to easy access to work portals and advanced software and tools, altogether enable connectivity to work. Thus, employees are granted wide control over when and where to work, eventually leading to higher JS. Second, career-related attitudes of some ambitious employees can explain JS, since they can be likely to stay connected to work after hours. Third, since digitalization can increase work productivity, efficiency, can make work more interesting, and can encourage interactions with work colleagues as well as knowledge sharing, it can increase JS among employees.

Hypothesis 3, which proposed a positive relationship between JS and in-role JP of employees in Egyptian private engineering consultancy companies, is supported by the statistical analysis ($\beta = 0.153$, $t = 2.581$, $p = 0.005$). The results indicate a statistically significant and positive relationship between JS and JP. Consistent with the hypothesis, the findings suggest that increased JS is associated with higher levels of JP in the same context.

The results are consistent with O'Leary et al. (2008) who argue that JS is generally conceived as a feeling of fulfilment or enjoyment which people derive from their jobs and is positively related to employee health and JP. Also, Gunlu et al. (2010) mentioned that employees who experience JS are likely to execute their duties well, leading to high performance and efficient service, which will directly increase the productivity of the organization.

Furthermore, the results support theory Maslow's hierarchy of needs theory, which has practical implications for management and organizations, suggesting to managers how they can make their employees or subordinates self-actualized. This is because self-actualized employees are likely to work at their maximum creative potential. Thus, organizations can recognize employees' accomplishments, provide financial security, opportunities to socialize, and promote a healthy workforce (Kaur, 2013).

These current research findings indicating a statistically significant and positive relationship between JS and JP can have several justifications. First, employees derive JS realization and pleasure sensation from their jobs, which they conceive as JS, thus they are likely to execute their work responsibilities well leading to increased JP. Second, when employees are satisfied with their jobs, they are less likely to be absent and they can make positive contributions to the organization to which they belong. Third, as employees are provided the opportunities to socialize, they are encouraged to feel the spirit of working as a team, thus they tend to increase their performance.

Hypothesis H4; the analysis shows that JS mediates the relationship between DCON and JP of the employees in the Egyptian private engineering consultancy companies, supported by the statistical analysis (β = 0.030, t = 1.928, p = 0.027). Consistent with the hypothesis, the findings confirm the mediating effect of JS on the relationship between DCON and JP in the same context.

The results are consistent with Sonnentag (2012), who mentions that detachment from work may intuitively seem undesirable from a managerial perspective and may seem unnecessary from an employee perspective, studies have repeatedly demonstrated that employees need time away from work for recovery to occur. Also, Sonnentag et al. (2010) argue that psychological detachment during leisure time provides a much-needed temporary break from job demands, which in turn could improve engagement. When individuals are able to detach from work, work-related demands no longer drain resources. Resources may be conserved, allowing workers to return to work in a fully recovered state the next morning and fit to cope with new work demands.

This current research findings indicating that JS partially mediates the relationship between DCON and JP can be contributed to the possible employee engagement in a certain level of DCON, at which more resources could be gained than lost, which can, in this case, benefit the employee JP.

5.2. Practical Implications and Recommendations

The results imply that DCON, such as access to technology and online resources, communication tools, and information sharing platforms, off work hours may enhance employees' ability to perform their assigned job tasks effectively and efficiently. It indicates that the use of digital tools and resources can positively influence employees' in-role JP within the specific context of Egyptian private engineering consultancy companies. These findings have important implications for organizations in this industry, highlighting the potential benefits of promoting and supporting DCON among employees. These results imply that DCON may contribute to employees' overall satisfaction with their jobs. Thus, when organizations embrace and promote DCON, they can potentially enhance both JS and JP. The findings suggest that employees who experience higher levels of JS are more likely to demonstrate better in-role JP in the context of Egyptian private engineering consultancy companies, because, they are more motivated, engaged, and committed to their work, which can positively impact their JP.

Organizations can also focus on various factors that contribute to JS, such as providing meaningful work, recognition and rewards, opportunities for growth and development, supportive leadership, and a positive work environment.

5.3. Conclusion

In conclusion, the findings of this study provide valuable insights into the potential benefits of DCON for enhancing employee JS and JP, among the employees of Egyptian private engineering consultancy companies. The results are consis-

tent with some previous research on the benefits of DCON. They suggest that DCON may be a valuable tool for being responsive during non-work time and maintaining high levels of JS and JP as well as proactive work behavior. DCON can increase the employees' JS because they can be more productive with more flexibility and extended ability to solve work-problems. Given the current economic situation, these findings have important implications for employees of Egyptian private engineering consultancy companies. However, it's important to acknowledge the limitations of this study. One of the main limitations is that this current research relied solely on self-reported measures of JP, which may be subject to bias and measurement error. Additionally, demographic data is not considered in this research. Future research could build on these findings by using dyadic data analysis and considering demographic data. Additionally, future studies could explore the potential impact of different levels of DCON on JS and JP. Overall, the findings of this study contribute to a growing body of evidence on the benefits of DCON on both JS and JP. They also highlight the potential of DCON for promoting employees' ability to perform their assigned job tasks effectively and efficiently, enhancing JS and overall employee well-being, enhancing collaboration, motivation, engagement, and commitment to work, productivity, and capability to make decisions. As such, these findings have important implications for organizations interested in promoting JS and JP for employees in Egyptian private engineering consultancy companies.

6. Limitations and Future Work

6.1. Limitations

Other factors that may influence JP are not considered in this research, e.g. the instrument taken to measure the JP is a self-reported tool, where the target employees self-assess their JP, which may lead to self-report bias, since it cannot be possible to obtain the truth about employee JP. Besides, demographic data comprising age, gender, position, educational degree, etc. is not considered in this research. Different levels of DCON are not measured to explore the related potential impact on JS and JP. Other factors such as individual differences, job characteristics, job demands, job-related skills, task clarity, resources and organizational support, etc. are not considered. Other factors that also may influence JS are not considered, such as organizational culture, work-life balance, and career development opportunities. Also, this research is cross sectional where the data collection took place once from April 2023 till June 2023, to give a glimpse into this research variable and their relationships.

6.2. Future Work

Further research can help investigate the mechanisms and underlying factors that contribute to the relationship between this current research variable, in order to explore the complex interplay between these variables in the specific context of Egyptian private engineering consultancy companies. It is recommended

to measure JP by using other instruments and methods, e.g. dyadic data analysis, in which the responses of two linked individuals are collected: the employee and his/her supervisor, instead of self-reported tool where the employee is assessing himself/herself for the JP variable. This can limit self-report bias and can enable obtaining more realistic data about employee JP. Demographic data can be considered in future research, to enhance the significance of the relationship between the variables. Besides, further research can focus only on the employees experiencing high levels of DCON to enhance the significance of the relationship between the variables. It is essential to consider other factors that may influence JP, such as individual differences, organizational culture, job characteristics, job demands, job-related skills, task clarity, resources and organizational support. It is also important to consider other factors that may influence JS, such as organizational culture, work-life balance, and career development opportunities.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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