The influence of perceived organizational support on employee creativity: The mediating role of work engagement

Abstract

The aim of this study is to examine the relationship between perceived organizational support and employee creativity mediated by work engagement. We report the results from a questionnaire survey on a sample of 492 professional employees (219, 44.51% females and 273, 55.49% males) employed in two major industries in the United Kingdom. Our findings based on regression analysis show that work engagement mediates the relationship between perceived organizational support and employee creativity. In summary, employees who experience perceived organizational support will promote work engagement and employee creativity more so than employees with low levels of perceived organizational support. We contribute to knowledge by proposing an overall theoretical background to organizational support theory and the job demands-resources model by incorporating social exchange theory. To-date, very few studies have examined the role of work engagement in the relationship between perceived organizational support and employee creativity. While researchers know how perceived organizational support effects employees' commitment, productivity, satisfaction and turnover intention, this study concentrates on how perceived organizational support leads to employee creativity.

Keywords Perceived organizational support, Work engagement, Employee creativity, Social exchange theory.

1. Introduction

Industrial organizational psychologists, business management researchers and practitioners, all have more to learn about employee creativity (EC). Over the last 30 years, studies of creativity and motivational processes have been published in academic journals (Liu et al. 2016). From a sample of 1,400 documents for the period 1990 to 2015, Williams et al. (2016) report that 36% of these publications reflect three dominant topics of creativity research, innovation in the workplace, the role of personality and intelligence in divergent thinking, and creative performance with a focus on idea generation.The main aim of our research is to develop a stronger theoretical approach to perceived

organizational support (POS) and employee creativity (EC) by linking concepts of social exchange theory (SET) and job demands-resources (JD-R) and integrating them with relevant theories on EC. Our intention is to develop a more comprehensive model by examining the influence of employee perceptions on creativity.

This research responds to the calls for a more comprehensive model of the relationship between POS and EC (Eisenberger et al. 2020; Zhang et al. 2016). Taking into consideration the inconsistent results of previous studies, some researchers have argued that the relationship between POS and EC is conditional (Zhang et al. 2016). Further, Bäckström and Bengtsson (2019) urge researchers to examine questions on how management support for employees' innovative behavior can create, develop and execute ideas? Oldham and Cummings (1996) defined creative performance as products, ideas, or processes that are original and potentially relevant for the organization, however, creativity and innovation are frequently differentiated from each other.

The main theory selected for this study is social exchange theory (SET) which is applied to analyze the proposed conceptual framework. SET is defined "as an exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons" (Homans 1961, p. 13). Blau (1964) refers to SET as "voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do it in fact from others" (p. 91). Song and Gu (2020) stated that relatively few researchers have investigated the central effect of exchange ideology on individual attitudes and behaviors. Moreover, there is a clear gap in the literature as to what extent employee-organization exchange relies on EC, amongst other outcomes (Pan et al. 2020). Moreover, Pan et al. (2020) note that the relationships between individuals and organizations lack sufficient attention by researchers concerning social exchange. Therefore, there are compelling reasons for analyzing which resources are exchanged in diverse types of association (Cropanzano and Mitchell 2005).

Although research on creativity is in abundance, few models identify critical factors influencing its relationships (Malik and Butt 2017). Consequently, researchers are motivated to explain many debateable issues on creativity (Malik et al. 2019). In building our theoretical framework on the association between POS and EC, we examine the mediating role of WE. Some critical relationships between POS and EC have not yet been thoroughly examined, including the potential mediating effect of psychological factors (Zhang et al. 2016). Further, Eisenberger et al. (2020) confirm that only a few studies have investigated the association between POS and WE, and there is a dearth of empirical studies reported in the literature on the relationship between engagement and creativity (Ismail et al. 2019).

Consequently, we concentrate on posing one important research question: Does POS influence the level of EC when mediated by WE?

The study contributes to knowledge by filling several gaps in the literature on the relationship between POS and employee creativity. First, it extends knowledge on how work engagement plays a role between POS and employee creativity. Reviewing the literature, it becomes evident that few empirical studies investigate the relationship between POS, work engagement and employee creativity and several scholars have recommended more theoretical analysis and empirical investigation into these relationships. Therefore, the current study concentrates on employee creativity as one of the major consequences of work engagement. Second, from a psychological perspective, employee creativity is a crucial consequence of POS due to its power to signal to employees to become more engaged in creative activities. Third, it is important to investigate the mediating role of work engagement for organizations that aim to value and appreciate employees' work engagement in tasks leading to enhanced employee creativity.

In the remainder of this paper, we review the literature and theoretical basis for asserting POS can develop and increase WE and EC. The purpose is to understand the potential of POS for EC and its importance for employee–employer relationships. The conceptual model and hypotheses are presented followed by the methodology and results. Finally, we discuss the theoretical and empirical contribution, future studies and conclude on the contribution of POS to WE and EC for enhancing organizational performance.

2. Conceptual framework and model hypotheses

Review the literature in four sections below

2.1 The relationship between POS and EC

POS plays an essential role in the employee–employer relationship and has implications for enhancing employees' well-being and alignment with the organization's goals (Kurtessis et al. 2017). POS defined as "global beliefs about the extent to which the organization cares about their wellbeing and values their contributions" (Eisenberger et al.

1986, p. 501). POS also fulfills socioemotional needs and influences psychological well-being (Kurtessis et al. 2017). Akgunduz et al. (2018) propose that when the organization values employee contributions and fulfills employees' needs it will enhance POS. However, organizations have to invest in employees' power to enhance their perceptions of support, develop capabilities and increase their potential for creative work. POS means recognizing, rewarding, appreciating and encouraging employees who demonstrate creativity (Zhou and George 2001) and stimulating their creativity in generating novel ideas (Neves and Eisenberger 2014).

Creativity is the creation of beneficial new services, products, and ideas (Woodman et al. 1993) and has been defined "as the production of novel, useful ideas or problem solutions" (Amabile et al. 2005, p. 368). However, Van de Ven (1986) defines innovation "as the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order" (p. 590). Therefore, a distinction is often made between creativity (i.e., exploring and generating ideas) and innovation (i.e., championing and implementation of ideas) (De Jong and Den Hartog 2010) (p. 23). Anderson et al. (2014) distinguish the two into separate stages, "The creativity stage of this process refers to idea generation, and innovation refers to the subsequent stage of implementing ideas" (p. 1298). Hughes et al. (2018) differentiated between creativity and innovation by conceptualizing idea generation as part of both creativity and innovation, while considering idea promotion and implementation as distinctive of innovation. As a result, scholars are paying close attention to the topic of individual creativity (Wang et al. 2021).

The relationship between POS and creative behaviors remains largely unexamined (Khazanchi and Masterson 2011). Moreover, Duan et al. (2020) stated that the relationship between POS and EC is a distinct gap in the literature. POS is based on organizational support theory (OST), stressing the importance of seeing employees as valued and appreciated organizational assets deserving the company's investment (Luksyte and Spitzmueller 2015). When perceiving high support from their organizations employees are encouraged to adopt positive attitudes and behaviors (Tsachouridi and Nikandrou 2018). A cross-sectional survey was conducted by Zhang et al. (2016) collecting data for 198 employees from six organizations located in Korea (e.g., railway, clothing, electronic and health care companies). The relationship between POS and EC was found to be positive and significant (Zhang et al. 2016). Another empirical study by Tang et al. (2017) based on responses from 268 employees and matched supervisors from two different organizations in China found POS has a positive and significant effect on EC. A recent empirical study conducted on

a sample of 410 employees from 68 organizations in China, found that POS is positively and significantly associated with EC (Duan et al. 2020). Based on the previous empirical studies, we argue that POS plays a crucial role in the creativity of employees, since it helps to foster realization of employees' creativity. When an organization appreciates employees' contribution in ways that encourage employees to think differently generating new ideas and solutions for important issues, then creative outcomes are more feasible to achieve. Moreover, when employees' apperceptions are that the organization cares about their opinions these supportive feelings contribute to norms of reciprocity towards the organization's goals and objectives (e.g., EC).

POS may enhance employees' perceptions that the organization is supportive of their EC (Khazanchi and Masterson 2011). According to OST, when employees perceive the organization rewards their hard work, it increases employee motivation and can lead to other benefits (Zhang et al. 2016). Neves and Eisenberger (2014) claim that employees with high POS will trust their organization and take risks because they feel that the organization will support them in cases of failure. Further, when an organization values employees' contributions and cares about their well-being (Guest 2017), they are also more likely to take risks (Neves and Eisenberger 2014). Therefore, the more employees' co-workers, supervisors and managers offer support related to creativity the higher their creative performance (Madjar et al. 2002; Pinnington and Hammersley 1997).

Consistent with SET, supportive characteristics of POS, including valuing and appreciating employees' contributions engenders increased trust that establish obligations for more EC. Chen et al. (2020) demonstrated that appreciating employees in the workplace matters for facilitating organizational citizenship behaviours and creativity. POS prompts norms of exchange leading employees to work towards required organizational outcomes (Eisenberger et al. 2020). High levels of POS generate obligations within individual employees to reciprocate the organization (Akgunduz et al. 2018; Settoon et al. 1996). POS has the capacity to produce felt obligations (Cropanzano and Mitchell 2005; Yu and Frenkel 2013). By nurturing individual employees' sense of obligation and increasing reciprocity between employee and employer, POS enhances organization performance (Hameed et al. 2019). Based on the aforementioned arguments we state the following hypothesis:

Hypothesis 1: Perceived organizational support relates positively to employee creativity.

2.2 The relationship between POS and WE

There are a number of definitions available in the literature on WE. Kahn (1990) defined personal engagement as the ways people express themselves physically, cognitively, and emotionally during role performances. We adopt the definition of engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption" (Schaufeli et al.'s 2002, p. 74). Employee vigor, dedication and absorption can assist organizations with achieving work goals and so it is worthwhile supporting these attributes (Eisenberger et al. 2020). Vigor is typified by high levels of energy. Dedication refers to a sense of enthusiasm, significance, inspiration, and challenge. Absorption is categorized by being fully concentrated and happily occupied in one's work, whereby time passes quickly (Schaufeli and Bakker 2004; Schaufeli et al. 2006). Work engagement is different from work performance, although it can be linked to employee's performance; work engagement is seen as a positive work-related state of mind rather than a performance level (Kulikowski and Sedlak 2020).

Support and challenging work are two job resources found to lead to WE (Byrne et al. 2016). Whether or not POS is more significant in affecting employees' WE is debateable (Shi and Gordon 2020). A recent meta-analysis (of 112 publications) by Ahmed et al. (2015) concludes convincingly that POS has a strong positive influence on employee engagement. POS can enable and motivate employees to engage in work activities in ways that enhance organizational outcomes. Several empirical studies reported in the literature support our argument. A recent study of a sample of 638 employees working in the banking sector in Pakistan found that POS is positively associated directly with WE, also, POS is indirectly positively linked with WE through flourishing and thriving (Imran et al. 2020). Another empirical study conducted on 2,408 employees working in private and non-profit organizations in the USA, similarly found that POS is significantly and positively linked with WE (Khodakarami and Dirani 2020).

SET provides a theoretical basis for understanding WE. Engaged workers create a sense of energetic identification with their work and consider themselves able to accomplish work requirements (Chevalier et al. 2019). Supervisors giving regular feedback and demonstrating that they care about employees' well-being, opinions and work-life balance make a crucial contribution to WE (Shi and Gordon 2020). Employees with high POS and WE are more proactive and productive than those who feel unsupported and disengaged.

Consistent with SET, employees perceiving high organizational support are more predisposed to achieving the organization's goals demonstrating individual resilience, dedication and well-being. POS contributes to individual enthusiasm, happiness, energy, dedication and attentiveness. Lan (2020) stated that POS is a vital predictor of WE, however the fundamental explanation for its influence remains unclear. However, POS and WE are both compatible with achieving positive outcomes for employees such as resilience, dedication and well-being. POS assumes that support, appreciation, and caring for employees leads to more engagement with work roles based on an ideology of felt obligations. We, therefore, propose that POS and WE could be linked. We argue therefore that POS will lead to greater WE and individual sense of obligation to achieving the organization's objectives. Consequently, we assert:

Hypothesis 2: Perceived organizational support relates positively to work engagement.

2.3 The relationship between WE and EC

Studies on the relationship between employee engagement and creativity are lacking (Ismail et al. 2019). Several scholars recommend more research should be conducted on employee engagement, innovative behavior and work performance (Eldor and Harpaz 2015; Slåtten and Mehmetoglu 2011). One foundation for this relationship mentioned by Kahn (1990) is that employees can become physically, cognitively and sympathetically attached to their creativity. Consistent with this perspective, Christian et al.'s (2011) meta-analytic review conceptualized WE in three main dimensions (physical, emotional, and cognitive antecedents for EC) arguing that these dimensions may motivate employees to develop new ideas. Bakker et al. (2020) stated that once employees are engaged in their work, this will encourage them to be more open to new ideas. Slåtten and Mehmetoglu (2011) have argued that positive emotional orientations embedded in WE are related to more creative behavior. There is some degree of consensus amongst researchers that intensive engagement through high psychological involvement produces more critical thinking and creative processes (Jiang and Yang 2015). Eldor and Harpaz (2015) argue that engaged employees whose work practices are imbued with positive attitudes and emotions (e.g., inspiration, challenge, and enthusiasm) are more likely to think and behave creatively. Moreover, Eldor (2017) maintained that engaged employees will be more creative when they adapt to the organization's environment, share knowledge and exercise initiative. Further, when employees

have the proper knowledge and tools in their organizations, then they are more likely to behave innovatively (Aldabbas et al. 2020). Thus, creativity too might arise as one of the consequences of WE. Recent empirical studies lend support to our line of argument. Bakker et al.'s (2020) empirical study of Dutch employees from different organizations and backgrounds, found that WE is positively and significantly related to EC. Also, another empirical study on 272 employees working in research and development for small and medium enterprises based in Jordan, found a positive and significant relationship between WE and EC (Al-Ajlouni 2020). Furthermore, a significant relationship has been found between WE and EC. Ismail et al.'s (2019) study of a sample of 186 employees working in Lebanese companies concludes there is a significant relationship between engagement and creativity. Similarly, Asif et al.'s (2019) survey of 233 public sector employees in eastern China found WE significantly predicts EC.

Consistent with SET, this study contends that in the context of high POS, employees will want to reciprocate, their WE will increase and they will become more creative in their work leading to high EC. Felt obligations according to SET have numerous sources such as support from the organization, motivating feedback and appreciated learning and development opportunities. Moreover, Asif et al. (2020) suggest that a supportive organizational environment enables employees to practice integrity, honesty and self-respect which motivates them to create novel and beneficial ideas. Chang and Shih (2019) propose that a high level of WE in experimental and exploratory tasks in the workplace provides employees with more capacity and desire to offer creative ideas. Al-Ajlouni (2020) argued that EC can be attained and increased by highly engaged employees. We assume in our conceptual framework that WE motivates individuals towards valued goals and objectives, therefore, we state that WE has an antecedent relationship to EC. Based on the above argument, we formulate:

Hypothesis 3: Work engagement relates positively to employee creativity.

2.4 The mediating role of WE

There is evidence in the literature reporting mediating effects of employee engagement with several antecedent and consequent variables (e.g., Christian et al. 2011; Saks 2019), including relationships between job characteristics and employee outcomes (De Spiegelaere et al. 2014). However, there is a lack of studies examining the mediating role of

WE in the relationship between POS and EC. Following JD-R theory, our argument is that POS is likely to offer several job resources that relate to WE and can result in employees achieving organizational outcomes including EC. The JD-R model has been used extensively in research on the predictors and antecedents of employee engagement (Saks, 2021). Empirical research will assist with determining the extent that investing in employees and offering recognition leads to strong social exchange relationships between employees and employers (Cropanzano et al. 2017; Wayne et al. 1997). In our selected research problem focusing on EC, we examine the issues in one context to ascertain to what extent engaged employees are more productive, creative and willing to exert extra effort (Bakker and Demerouti 2008).

There is recent empirical evidence for the mediating role of WE. An empirical study conducted by Tsai et al. (2015) based on 320 employees working in the tourism and hospitality industries in Taiwan found that organizational support is indirectly related positively and significantly to EC through its effects on multiple mediators (justice, motivation, knowledge sharing and promotion). A survey conducted on 320 employees employed in small and medium size high-tech companies in Spain, found a positive and significant relationship of leader member exchange (LMX) with EC through WE (Vila-Vázquez et al. 2020). Another study based on 600 respondents who were leaders and employees working in start-up companies in India, found that perceived authentic leadership has positive and significant effects on EC through WE (Sengupta et al. 2020). It is evident from these studies that the effects of organizational support and leadership on creativity are mediated by WE. Moreover, WE mediates the effect of other independent variables such as the relationship of employees' perceptions of corporate social responsibility on creativity. Chaudhary and Akhouri's (2019) survey of 316 employees in IT companies in India found the relationship of corporate social responsibility perceptions with creativity being mediated by WE.

We argue that POS offers socioemotional support and can be positively related to WE. When employees feel they are valued and appreciated by their organizations, it enhances self-esteem, which increases their understanding of their capabilities to manage work stress (Xu and Yang 2021). WE has the potential to motivate employees to work creatively in reciprocity with their organization's support. The tenets of OST recommend organizations exhibit care for employees' well-being and value their contributions. Saks (2019) recently considered WE as a mediator between antecedents and consequents (job satisfaction, organizational commitment, organizational citizenship behavior and intention to quit) and we predict WE mediates POS and EC. We expect WE facilitates efficacy of POS in encouraging

positive outcomes including EC. Hence, we propose that WE is a potential mediator that may contribute to explanation of associations between POS and EC. Based on the above reasoning we state our hypothesis:

Hypothesis 4: Work engagement mediates the positive relationship between perceived organizational support and employee creativity.

Objective of the study

Our objective in this study is to develop and examine a comprehensive model explaining the relationships between POS, work engagement and employee creativity. More precisely, we analyze the relationship between POS and employee creativity, POS and work engagement, work engagement and employee creativity. Moreover, we assess the mediating role of work engagement in the relationship between POS and employee creativity through work engagement. Figure 1 indicates indirect relationships between POS and employee creativity through work engagement. Overall, our study aims to fill a gap in the literature by examining the relationship between POS, work engagement, and employee creativity.

3. Methods

A quantitative study, which uses the SPSS program with PROCESS macro (Model 4).

3.1 Sample and procedure

The study focused on two industries (IT and banking) located in the United Kingdom (UK) and operating mainly in the services sector. Following Wamba et al. (2017) data were collected through market research based in the UK, due to the availability of their database, and its reputation for accuracy and quality. Jackson et al. (2016), for example, used a survey research firm to collect their sample dataset. To ensure validity, our survey was designed by the authors and an online link to the survey was shared with a third party to distribute it through their own database. Employees who had been working for less than one year were asked not to participate. The third party sent out invitations to 1,152 people, specifically, 592 invitations to those working in IT and 560 in the banking industry. A total of 535 surveys were returned, 32 surveys were incomplete, and 11 respondents were considered as extreme outliers and so were all

eliminated. The response rate was 43% for the total of **492** fully completed survey returns received. The data collection took approximately one week, occurring during the second week of January 2020.

3.2 Multicollinearity

Multicollinearity occurs when there are high correlations between the latent exogenous constructs and.70 to .80 among latent variables is fairly common (Grewal et al. 2004). However, based on the bivariate correlation results of our study the highest correlation is 0.713 between WE and EC (Table 2). To eliminate multicollinearity concerns with our latent exogenous constructs, we conducted a variance inflation factor (VIF) test. The results were that POS is 1.708 and WE is 1.708. Since, the VIFs of the constructs were below the threshold value of 5.0, multicollinearity in our model is not a major problem.

3.3 Measures

Perceived Organizational Support: 10 items were selected from Eisenberger et al. (2020) and are interpreted as one construct in our study. An example of these items is "The organization values my contribution to its well-being". A 7-point Likert-scale was deployed ranging from 1 = strongly disagree to 7 = strongly agree. The Cronbach's α was .939 for all 10 items.

Work Engagement: Following Schaufeli et al.'s (2006) recommendation we chose 9 items (Utrecht WE Scale–9 [UWES-9]); the shortened scale version is taken from the original 17-items (Utrecht WE Scale [UWES-17]) (Schaufeli et al. 2002). Notably, Schaufeli et al. (2006) remarked that the WE scale has been examined in over ten different countries constituting a sample of 14,521 respondents. Several dozen studies on engagement have been published, the majority of them adopting the Utrecht Work Engagement Scale (UWES) to measure work engagement (Saks 2019). It is evident that many recent studies are implementing the WE scale (Bakker et al. 2020; Ferraro et al. 2020; Imran et al. 2020; Pace and Sciotto 2021). The 9 items reflect the core dimensions of engagement: vigor, dedication, and absorption. However, WE was designed in our study as one construct contains three the above dimensions. The 9 statements address how the individual feels at work; an example question item is "At my work, I feel bursting with

energy". A seven-point Likert scale from 0 to 6 scale (0 = never to 6 = always) was used and the Cronbach's α for these nine items was .939.

Employee Creativity: 5 items on EC were adopted from Coelho and Augusto (2010); several recent studies are using the same scale to measure individual employee creativity (Hur et al. 2020; Liao et al. 2018; Moon et al. 2019). An example item is "I try to be as creative as I can in my job". The Cronbach's α was .891. A 7-point Likert-scale was deployed ranging from 1 = Strongly disagree to 7 = Strongly agree. Researchers and scholars in various situations need to depend on "self-ratings" of individual creativity because it is probable that workers themselves are more aware than their line managers on what makes their ideas creative (Ng and Feldman 2012). Moreover, employees may be in better position than line managers or colleagues to assess which new ideas essentially can be considered creative in their work settings (Ng and Feldman 2012). However, we argue that while self-rating by employees might be considered biased, so too may supervisors' ratings of employees' creativity be biased especially in cultural settings where organizational politics is high. Therefore, our survey has relied on the principle of self-rating principle to assess the creativity which we consider to be suitable for our research question and study objectives.

Demographic information

Table 1 presents the respondents' demographic characteristics. The results are based on a larger proportion of male workers (n=273, 55.49%) than female (n=219, 44.51%). Most of the respondents' age ranges from 31 to 40 years old (n=206, 41.87%). Their occupational classification is professional employees working as auditors, credit analysts, quality assurance managers and software engineers). For length of tenure with the employing organization, the majority of respondents ranged between 2 to 7 years of experience (n=191, 38.82%), and the majority possessed a Bachelor's degree (n=203, 41.26%). Two industries are represented with n=279, 56.71% working in IT, and n=213, 43.29% in banks.

(Insert Table 1 __ about here)

4. Results

4.1 Descriptive statistics

Table 2 presents the means, standard deviations (SD) and correlations. The highest mean is POS (5.049). The highest correlation is WE with EC (.713), significant at 0.001. The assessment of normality test (skewness and kurtosis) provide values for all constructs were between < 1, demonstrating they meet the acceptable range for normality (e.g., |skewness|< 1, |kurtosis|< 1).

(Insert Table 2 __ about here)

4.2 Exploratory factor analysis (EFA)

The KMO is .961 which means, that the sample is adequate (KMO ≥ 0.70), because near to 1 means the items are adequately related to their respective factor. Next, we applied Bartlett's test of sphericity which is significant at 0.001. It is an influential tool to better understand the structure of the dataset and categorize the logical combinations of constructs (Hair et al. 2014). The study contains 24 questions, and these factor loadings aligned closely with the main constructs of our survey. In addition, the findings all exceed .55, thus, all items were accepted and retained without any item deleted.

4.3 Common method variance (CMV)

A CMV analysis is necessary to perform to ensure reliable results are obtained (Podsakoff et al. 2003). CMV is well recognized as an interactive approach (Malhotra et al. 2017). Since we collected our sample from the same source which may cause CMV, we took specific measurements in the questionnaire design to minimize the impact of CMV. Firstly, our questionnaire contains 24 questions or items which means it is succinct helping to avoid the problem of respondents experiencing feelings of boredom and fatigue (Lindell and Whitney 2001). The demographic questions were deliberately placed at the end of questionnaire since such questions require modest cognitive processing (Lindell and Whitney 2001). Furthermore, our survey assured respondent anonymity and confidentiality, and the wording of

the items was kept specific and simple to minimize the impact of CMV (Tehseen et al. 2017). A further step taken in designing the survey was targeting professional employees, therefore satisfying Rindfleisch et al.'s (2008) criteria for cross-sectional data, namely, it should test concrete oriented variables, sample appropriately educated respondents, employ a varied range of measurement approaches and scales, and ensure they are firmly based on rigorous theory.

Following Harman's Single-Factor test, we extracted total variance with an unrotated factor method finding that the first factor accounted for 48.964% of variation which is below the 50% cutoff (Eichhorn 2014). However, Fuller et al. (2016) criticized the technique assessing CMV levels involving a one-factor test that examines how much common variance might exist in a single dimension. Therefore, we also used another technique which is common latent factor (CLF) analysis as proposed by Eichhorn (2014). This approach creates a new latent variable relating all of the items into the new latent factor, ensuring all paths are controlled to be equal and the variance of the CLF is controlled to 1. The differences in these standardized coefficient weights found in our sample were small (<0.200) (Gaski 2017). Which is further evidence indicating CMV is not a problem in our dataset.

A final step that we took to ensure that CMV is not a major concern, we used confirmatory factor analysis (CFA) technique by loading all items into one factor as recommended by Malhotra et al. (2006). The results indicate that the one factor model (merged all indicators of POS, WE and EC) is X^2= 2650.21, df= 252, CFI= 0.729, TLI= 0.703, SRMR= 0.094, and RMSEA= 0.094 (see Table 3), which has an acceptable goodness of fit. Therefore, we assert that CMV is not a problem in the presented sample (Podsakoff et al. 2003).

Then, we proceeded with other tests to ensure the validity of our findings

4.4 Confirmatory factor analysis (CFA)

Based on EFA, the items were all approved grouping under their own variable. Then, we started with CFA analysis. The Comparative Fit Index (CFI) = .941 and is greater than .90 which suggests a good fit for the model. According to Hu and Bentler (1999), the Tucker-Lewis index (TLI) =.934 and a cutoff close to .95 is considered a reasonable result. The standardized root mean square (SRMR) in the study is 0.036 which is lower than .05 and can be considered a good match. The Root Mean Square Error of Approximation (RMSEA) = 0.066 is less than 0.08 and is therefore a

reasonable error based on Chen et al. (2008). Therefore, all of our survey questions have acceptable fit levels (Table 3).

(Insert Table 3 __ about here)

4.5 Convergent and discriminant validities

Convergent validity is based on the average variance extracted (AVE) and composite reliability (CR). The AVE is as follows, POS is 0.564; WE is 0.525 and EC is 0.551, exceeding .50 and indicating adequate convergence (Hair et al. 2014). However, for our constructs (POS, WE and EC), the average loading was .749, .724, and .742 respectively. After applying Gefen and Straub's equation the results for CR of the three constructs are: 0.928 for POS, 0.909 for WE and 0.860 for EC. As a cutoff, these findings are greater than 0.70, and we conclude that convergent validity has been established. We calculate CR according to Gefen and Straub (2005) (equation 1).

$$CR= (\Sigma\lambda i^2)/((\Sigma\lambda i^2) + (\Sigma (1- \lambda i^2)) \text{ ----------(equation 1)}$$

The discriminant validity test is a prerequisite for the examination of latent variables relationships (Henseler et al. 2015). If the constructs are highly correlated, that means that they lack discriminant validity (Grewal et al. 2004). Hence, we analyze the square root of the AVE to the correlations of this construct to all of the other constructs (Gefen and Straub 2005). We find that the measurement questions are closely linked to their construct. Moreover, the AVE's square root is greater than are the correlations with other variables (e.g., the AVE's square root of POS is 0.751, WE is 0.725 and EC is .742). Therefore, we may conclude that discriminant validity is established. The concept is that a construct should be more linked to its own indicators than to other constructs (Grewal et al. 2004).

4.6 Hypotheses testing

PROCESS macro (model 4, confidence level 95%, 5000 bootstrapping; Hayes 2018) was used to test our hypotheses (H1 to H4). After controlling for demographic information we test all constructs together. Firstly, the direct relationship between POS and EC is positive and significant (B =0.132, t=3.071, $p < 0.01$) which supports H1. Secondly, we find that the relationship between POS and WE is strongly positive and significant (B =0.650, t=18.619, $p < 0.001$) which supports H2. Thirdly, the relationship between WE and EC is strongly positive and significant (B

=0.652, *t*=15.359, p < 0.001) which supports H3. Further, the probability of indirect effects is crucial when measuring mediation (Hayes and Scharkow 2013). Mediation occurs when one construct mediates the independent variable's effect on the dependent variable (Preacher and Hayes 2004). We find that (POS) relates positively and significantly indirectly to the (EC) through our mediator WE (B =0.424). Since the zero is not fall between the confidence interval range [.351, .499], we conclude that p < 0.05, thus, WE mediates the relationship between POS and EC, consequently, H4 is supported. Furthermore, the total effects of POS on EC are B =0.555, *t*=13.921, p < 0.001. The regression results of the "PROCESS" (Hayes 2018) are shown in Table 4 and Figure 1.

(Insert Table 4 __ about here)

(Insert Figure 1 __ about here)

5. Discussion

This current study examined whether the association of POS with EC is mediated by WE. In our survey of a sample of employees working in the IT and banking industries in the UK, we find that POS has a positive relationship with EC, mediated by WE. More specifically, there are positive relationships between POS and WE, WE and EC, and the direct and indirect relationships of POS on EC. All four hypotheses are supported in this study investigating how POS can foster EC.

One of our main findings is that POS has a significant positive impact on EC. This is consistent with several recent empirical studies identifying a positive and significant relationship between POS and EC (Duan et al. 2020; Tang et al. 2017; Zhang et al. 2016). However, the effect of POS on EC remains debated (Zhang et al. 2016). Some recent studies have found no significant relationship for POS with individual creativity (Zaitouni and Ouakouak 2018) and Suifan et al. (2018) found no significant relationship for some EC dimensions. Shalley and Gilson (2004) noted that supportive management can have differing consequences related to personality and cognitive individual differences. Explanations of these conflicting findings requires more knowledge about the role of individual differences in personality, disposition, understanding and skills in creativity. Contrary findings might be further explained by factors in the internal environment of the organization. For example, organization cultures may differ in their capacity to

motivate high employee trust (Zaitouni and Ouakouak 2018), as well as co-worker and team member support (Tsachouridi and Nikandrou 2018). If the organization culture or management style establishes low individual work autonomy and fails to establish sufficient POS, then EC behaviors will less likely be supported (Pinnington and Haslop 1995; Suifan et al. 2018). Moreover, leadership style (e.g., servant leadership) plays a vital guiding role for encouraging innovative individual service behaviours, providing supervisors with ideas on how to enhance innovative employee action (Su et al., 2020). Based on the above studies we anticipated that employees with such organizational support may be expected to have a high level of energy and engagement towards creativity.

We find in our study that POS is related to WE, consistent with the literature that provides empirical evidence supporting the assumption that POS influences WE (Chevalier et al. 2019; Khodakarami and Dirani 2020; Rich et al. 2010). Gillet et al. (2013) found that POS was positively related to the three dimensions of WE (vigor, dedication, and absorption) and reported that POS is positively related to job engagement. An empirical study conducted by Lan (2020) including 744 police officers in China, found that the direct relationship between POS and WE is not significant, while indirectly the relationship is significant through job satisfaction. Our argument here is that once employees have perceived support from their organization, this creates positive intentions towards their organizations leading them to be more involved and engaged in their work. Moreover, our sample was focused on professional employees who are working in the IT and banking industries, and as Khodakarami and Dirani (2020) note professional employees are often found to be more engaged compared to other groups of employees. For professional employees in our sample, we find that WE achieves 41.4% of the total variation arising from POS.

Our findings are consistent with many recent studies in the literature that provide evidence supporting the positive and significant relationship between WE and EC (Al-Ajlouni 2020; Asif et al. 2019; Bakker et al. 2020; Ismail et al. 2019). Our findings reveal a tendency towards a positive relationship between WE and EC. By affording employees with organizational support and valuing their contributions, employees are encouraged to perform work tasks in productive and creative ways. Our interpretation is based on the statistical results showing that 51.7% occurred from POS and WE. Therefore, we affirm that supportive intentions from the organization and engaged professional employees have the capacity to enhance EC in the workplace.

Finally, we find that WE mediates the relationship between POS and EC. This result is similar to some recent studies in the literature that support the importance of WE as a mechanism occurring between leadership and creativity (Vila-Vázquez et al. 2020; Sengupta et al. 2020), organizational support and creativity (Tsai et al. 2015), and corporate social responsibility perceptions and creativity (Chaudhary and Akhouri 2019). Our results demonstrate that once employees experienced WE, it indirectly enhanced their creativity influenced by their positive perceptions of organizational support. Our argument for this mediation effect is that when employees gain support from their direct supervisor or organizations such support leads employees to feel motivated, energetic and enthusiastic to perform their work, be more engaged with their work activities and as such these motivational factors then incite their creativity.

6. Theoretical and empirical contributions

POS plays a crucial role in fostering EC, although the best means of enhancing EC are not that well understood. Moreover, as stated earlier while researchers know about how POS effects employees' commitment, productivity, satisfaction and turnover intention, they know less about how perceived organizational support leads to employee creativity. In our research, we advance this line of investigation by proposing that the influence of POS on EC depends on the amount of WE. Thus, this study sheds light on the conditions and means under which job resources (e.g., POS) promote EC. The main findings from the survey research offer theoretical insights in two dimensions. First, there are few empirical studies reported in the literature on POS and EC and this is one that directly examines the relationship. Secondly, we have theoretically and empirically examined the mediation effect of WE in its relationship between POS and EC and showed that the relationship between POS and EC was mediated by WE, suggesting that high levels of WE may help employees to engage with their work oriented towards creative activities and this may lead to raising EC. Moreover, the more job resources that are made available (POS) to professional employees the more it nurtures EC due to the cognitive and emotional capabilities that WE provides in achieving organizations' growth and success.

For practical implications, management should become more aware of the importance of organizational support and its effect on WE and EC. It is recommended that organizations assist employees to improve their capabilities and respects their opinions and contributions in order to encourage their engagement and creativity. One practical implication then is for employers to design and implement human resource policies leading to POS (Loi et al. 2019). For POS to create opportunities for EC to arise, we argue that increasing WE is a significant area deserving greater

consideration from managers. Furthermore, management has to understand and apply appropriate support for EC (Shalley and Gilson 2004).

Moreover, the two industries (IT, and banking sectors) in UK report an average score for work engagement of 68%. In percentile terms, 21% of the sample is highly engaged, while 55% is moderately engaged, and 24% is almost disengaged. This empirical result is consistent with average global employee engagement scores, that report 68%; while Europe reports 60% (Adair, 2020). Arguably, then, WE can be improved in the UK sample through better job design, training programs and job rotation that could result in higher levels of engagement (Schaufeli 2012). Furthermore, organizations should provide supportive programs to influence employee's WE so that they become more dedicated to their work. By understanding their needs and individual differences organizations will be more likely to achieve desired outcomes such as engagement and creativity. Managers in these organizations in the IT and banking sectors should work closely with employees to ensure that they can perform with passion, enthusiasm, and energetic in executing creativity tasks. Consequently, organizations should support employees and motivate them to engage in their work and execute creative tasks that enhance EC. Increased EC can be a source of innovation and competitive advantage. We have emphasized that SET presents a well-defined explanation for why organizations should proliferate high quality relationships among employees to enhance their exchange benefits for employees and employers.

7. Limitations and future studies

There are several drawbacks in our research design. The dataset was collected from only two companies in the UK which limits its generalizability. While CMV is not a problem in our empirical study, self-report measures raise concerns about possible CMV. Even so, self-reports by individual employees could in future research work be extended to the perspectives of supervisors and peers since this might contribute to knowledge on WE and EC. Further, our research is a cross sectional survey with all data collected and measured during the same time period. Similar to many other studies on creativity, cross-sectional data do not permit drawing conclusions about causality. Further, our analysis is at the individual level and future studies could conduct multilevel analyses for the identical constructs. We examined the mediating role of WE in the relationship between POS and EC, and there may be other salient factors such as intrinsic motivation or extrinsic rewards for creativity? Given the fact that our research concentrates on the IT

and banking sectors similar empirical studies could be carried out in different industries (e.g. manufacturing) in order to understand more thoroughly how POS can influence WE and EC in different industry contexts. Furthermore, a longitudinal analysis will be suitable for future research assessing the same variables. Baran et al. (2012) suggested studies connecting POS in countries outside the United States would constitute an advance in knowledge on the internationalization of management.

8. Conclusion

Our research sheds light on the influence of POS on EC through WE in the workplace, making a significant contribution to the POS and EC literatures by offering insights on how WE enhances EC. Our data relies on employees in two industries (IT and banking). The findings reveal that POS can encourage employees to feel engaged in the workplace based on the support gained from their organization. We interpret this relationship theoretically based on SET, which enables employees to engage in creative task performance. POS and WE in our conceptual framework are antecedents of EC, which is an outcome that organizations aim to attain. Therefore, we conclude that WE explains the relationship of POS with EC. Moreover, to improve EC in companies operating in the UK, and probably elsewhere, we suggest that organizations provide employees with the required job resources (e.g., support). Such forms of support nurture positive emotions and give employees worthwhile reasons to be more engaged and creative in their work.

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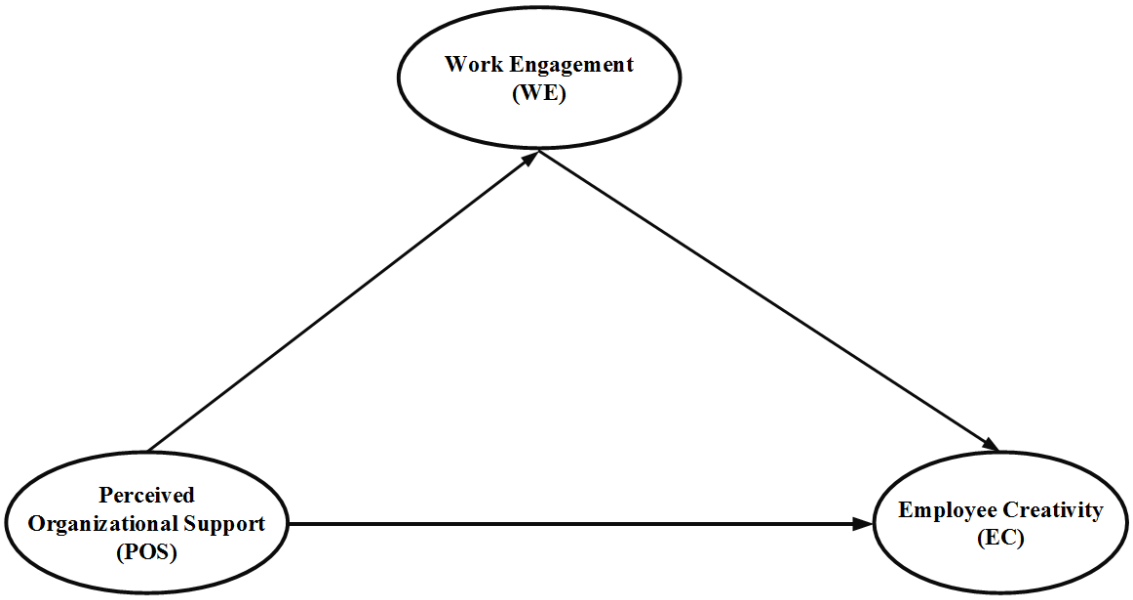

Fig. 1 Conceptual framework

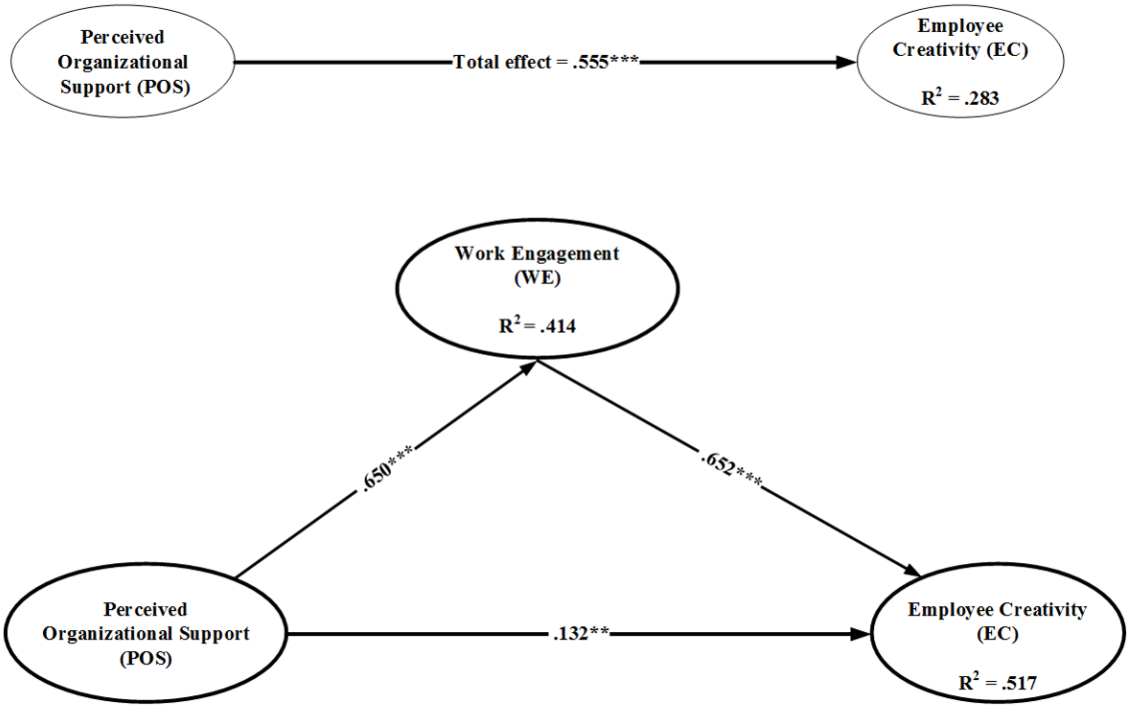

Fig. 2 Statistical results. *p< .05; ** p < .01; *** p < 0.001

Table 1 Demographic information

Variables	Frequency	Percent
Industry Type		
- Information Technology	279	56.71%
- Banks	213	43.29%
Education		
- High school	98	19.92%
- College degree	114	23.17%
- Bachelor's degree	203	41.26%
- Masters and above	77	15.65%
Tenure		
- Below 2 years	63	12.80%
- 2-7 years	191	38.82%
- 8-13 years	146	29.67%
-14-19 years	48	9.76%
- 20 years and above	44	8.94%
Ages		
- Under 30 years old	117	23.78%
- 31-40 years old	206	41.87%
- 41-50 years old	93	18.90%
-51-60 years old	59	11.99%
- 61 years old or older	17	3.46%
Gender		
- Male	273	55.49%
- Female	219	44.51%

Table 2 Mean, standard deviation and correlations

Variables	POS	WE	EC	Gender	Age	Education	Tenure	Industry Type
POS	1							
WE	.644**	1						
EC	.532**	.713**	1					
Gender	-.096*	-.094*	-0.036	1				
Age	-0.074	-.111*	-.112*	.198**	1			
Education	.105*	.135**	.141**	0.052	-.177**	1		
Tenure	-0.008	0.079	0.023	0.042	.385**	-0.055	1	
Industry Type	0.04	.103*	.139**	.134**	0.003	0.08	-0.009	1
Mean	5.049	4.755	4.564	1.555	2.295	3.506	2.632	1.567
SD	1.115	1.143	1.183	0.497	1.064	1.012	1.106	0.496

Notes: *p<0.05; **p<0.001. POS: Perceived organizational support; WE: Work engagement; EC: Employee creativity.

Table 3 Comparison of alternative measurement models

Model	X^2	df	CFI	TLI	SRMR	RMSEA
Three-factor (hypothesized)	755	249	0.941	0.934	0.036	0.066
Two-factor (merged POS and WE)	2133.33	251	0.787	0.766	0.085	0.123
One-factor (merged POS, WE and EC)	2650.21	252	0.729	0.703	0.094	0.094

Notes: POS: Perceived organizational support; WE: Work engagement; EC: Employee creativity.

Table 4 Regression results of PROCESS (Hayes, 2018, Model 4)

	Consequent									
	M (Work Engagement (WE))					Y (Employee Creativity (EC))				
Antecedents	B	SE	*t*	p value	Bootstrap 95% CI	B	SE	*t*	p value	Bootstrap 95% CI
POS	0.65	0.035	18.619	< .001	[.581, .718]	0.132	0.043	3.071	< .01	[.047, .216]
WE	-	-	-	-	-	0.652	0.042	15.359	< .001	[.568, .735]
Constant	0.017	0.032	543	0.587	[-.046, -.081]	-0.005	0.03	-0.172	0.863	[-.065, .054]
	$R^2 = 0.414$					$R^2 = 0.517$				
	F (1,490) = 346.680, p < 001					F (2,489) = 261.295, p < 001				

Notes: B: Beta; unstandardized coefficients are reported. Sample size = 492; Resampling= 5000 Bootstrap; M: Mediator; Y: Dependent Variable; SE: Standard Error; CI: Confidence Interval.