

Cognitive Appraisal of Job Autonomy by Nurses: A Cross-Sectional Study

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Abstract

Introduction: Job autonomy (JA), a task-level job resource has the potential to motivate individual behavior; it is indecisive, however, whether JA promotes or hinders extra-role behavior.

Objective: The study aims to examine the effect of JA on innovative work behavior (IWB) directly and indirectly through cognitive appraisal and work engagement (VE) while considering the organization type and age as control variables.

Methods: Self-administered questionnaires were used to collect the data from 326 nurses. SPSS and Amos 21 software was used to analyze the data. Data was collected between September, 2021 to January, 2022.

Results: According to the findings, JA can both stimulate and impede IWB indirectly through cognitive appraisal and VE depending on how it is appraised as a challenge and a threat ($\rho = .089, p < .001$); ($\rho = -.038, p < .001$), respectively.

Conclusion: The current study revealed that JA significantly influences the IWB of nurses directly and indirectly through cognitive appraisal and VE. Therefore, nursing management should find ways to influence nurse's appraisal of JA as a challenge rather than a threat to improve their extra-role behavior.

Keywords

job autonomy, cognitive appraisal, work engagement, innovative work behavior, nurses

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Introduction

The health sector is under immense pressure due to work overload, demanding work conditions, and a shortage of human resources (McKenna & Jeske, 2021). The current outbreak of the COVID-19 pandemic has further added to the stress on the health sector around the globe (Mohammed et al., 2021; Zheng et al., 2021). Among health sector employees, nurses (the frontline employees) are considered to be one of the key pillars supporting the health sector given that they spend the longest time with patients and take care of them (Mohammed et al., 2021; Santos et al., 2019; Wibowo & Mochklas, 2020; Zhang et al., 2020). Globally, there are 28 million nurses which are not sufficient to meet the demands of the health sector (WHO, 2021). The current shortage of nurses is a substantial issue that is feared to grow further (Pursio et al., 2021; WHO, 2021) due to COVID-19. In 60 nations, about 3,000 deaths of nurses due to COVID-19 have been recorded by the International Council of Nurses (ICN) (International Council of Nurses., 2020). To fill this gap, almost 13 million nurses are needed around the globe (Catton & Iro, 2021). Pakistan, like other developing countries, is also facing a shortage of nursing

staff (Ghafoor et al., 2021). Currently, 116,659 registered nurses make up 1:50, the nurse-to-patient ratio against the benchmark of 1:5 (Khuwaja, 2021). Captivatingly, scholars suggest that the pressure of shortage of nurses and their work-related imperatives can be managed through their extra-role behavior (Xerri & Reid, 2018).

Individuals' extra-role behavior that benefits both individuals and organizations is referred to as innovative work behavior (IWB) (Shih & Susanto, 2017). Because of the numerous benefits of IWB, organizations are continually looking for ways to nurture it in their employees (Afsar, 2016). In health care innovation, nurses hold a unique position (Asurakkody & Shin, 2018) as they are in a situation where they have to make critical judgments that necessitate innovative behavior (Dy Bunpin et al., 2016). Nurses'

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capacity to think creatively allows them to come up with new ideas for dealing with newly founded work-related demands (Yasir & Majid, 2019). It is reiterated that nurses' innovativeness is essential seeing that they are not only directly related to patients' health (Akhtar et al., 2020) but also play an active role in creating and supporting novel ways to promote health, lessen risk factors for health situations, minimize illnesses, enhance health attitudes, and improve therapy policies and procedures (Ahmed et al., 2019). For these reasons, nurses' IWB is among the most effective measures that health care organizations may employ (Xerri & Reid, 2018) to improve the quality of services (Ahmed et al., 2019) given the escalation of nursing capacity shortages (Xerri & Reid, 2018). At the individual level, job resources (i.e., job autonomy [JA]) are the prominent determinants of IWB (Kwon & Kim, 2020).

JA is one of the critical resources and it is believed that among all job characteristics, JA is the most significant factor that can influence IWB (Kwon & Kim, 2020) through well-being (WE) (Böckerman et al., 2020). IWB is a voluntary behavior that is not considered a part of one's job description thereby it cannot be impelled by rewards or penalties (González-Morales & Neves, 2015) neither it can be expected nor enforced by an explicit contract between individual and organization. This extra-role behavior is fully dependent upon an individual's will (Afsar, 2016) and employees are only expected to try and adopt new things in the workplace when they are highly engaged in their profession (Kwon & Kim, 2020) for that reason work engagement (WE) is considered as crucial determinant for IWB (Böckerman et al., 2020). JA when provided aids in maintaining a positive attitude that enhances the sense of responsibility and motivates employees to get themselves fully engaged in their jobs (Zhang et al., 2020). Employees engaged with their work tend to be inspired and deeply absorbed in performing their tasks despite overly demanding work conditions (Van Dorssen-Boog et al., 2020). It is proclaimed that empowered nurses with high autonomy to schedule and prioritize their tasks are more satisfied (AllahBakhshian et al., 2017; Pursio et al., 2021) and are highly engaged with their work (Kunie et al., 2017; Zhang et al., 2020). Employees who are engaged in their work become engrossed, vigorous, and dedicated to it, and are sometimes unable to detach from it even after the task has been accomplished (Ariani, 2013), making them more likely to participate in IWB (Nurjaman et al., 2019).

Nevertheless, a positive association between JA and IWB through WE has been confirmed by many scholars. However, in the nursing context, the association between JA and its positive outcomes (i.e., WE) is inconsistent (Wan et al., 2018). Drawing on the theoretical foundation of Lazarus and Folkman's (1984) transactional theory, it is argued that the immediate determinant that triggers an individual's reaction is not job characteristics itself, rather it is the individual's appraisal of core job characteristic as a challenge or threat

depending upon individual differences. Therefore inconsistent effects of any stressor (i.e., JA) may potentially be subject to an individual's cognitive appraisal (Lazarus, 1991, 1999; Naseer et al., 2019). As individuals cognitively appraise their job stressors as a challenge are highly engaged with work (Lin et al., 2014) which may promote functional behavior (Mitchell et al., 2019). While those appraising job stressors as threat show low engagement with work (Li et al., 2020) resulting in dysfunctional behaviors (Mitchell et al., 2019).

Based on the above argument, this study draws attention to the criticality of the nature of JA and its contextualization to the individual level (Zaniboni et al., 2013). JA is empirically proven to bring about paradoxical reactions in an individual's conceptuality. Li et al. (2020), Taris and Hu (2020), and Zhou (2020) hence call for a deeper examination of both brighter and darker aspects of JA. Since the dual effect of JA is predicted to be substantially associated with both challenge and threat appraisals (Naseer et al., 2019). Therefore, the current study attempts to clarify the perplexing effect of JA by incorporating the cognitive appraisal (challenge and threat appraisals) as a mediator as suggested by Mitchell et al. (2019). As the mediating effect of cognitive appraisal (as challenge and threat) between stressors and work-related outcomes have been substantiated by various authors (Ohly & Fritz, 2010; Prem et al., 2017; Searle & Auton, 2015; Webster et al., 2011), specifically between the relationship of stressor and WE by Kronenwett and Rigotti (2020) and Ma et al. (2021). Furthermore, the current study also explained the mechanism through which JA influences IWB and thus contributed toward scant literature regarding antecedents of IWB in health care.

Review of Literature

JA and IWB

JA as a job resource provides discretion, freedom, and independence to the job holder (Hackman & Oldham, 1974c). It is considered a facilitator in maintaining a positive learning attitude of individuals (Zhang et al., 2020) that provides a sense of responsibility and motivates them to get fully engaged in their jobs. The invention, testing, and execution of new ideas are all said to be favorably associated with autonomy. As autonomy makes the job more exciting due to the sense of freedom, responsibility, and control of work outcome, thus it increases intrinsic motivation (Deegahawature, 2014), drives creativity (Coelho & Augusto, 2010), and promotes IWB (Cangialosi et al., 2021). Jobs that provide employees little control over how, when, or where work is completed can inhibit their capacity to be innovative. On the other hand, a job that gives employees the freedom and independence to decide which procedures should be employed to complete a task improves the possibility that they will implement them in their jobs (De

Spiegelaere et al., 2015; Hammond et al., 2011). For this reason, employees' IWB is considered to be triggered by autonomy (De Spiegelaere et al., 2012; Sönmez & Yıldırım, 2019; Theurer et al., 2018; Yan et al., 2011). It is postulated that

Hypothesis 1: There is a significant relationship between JA and IWB.

JB and WE

JA instills a sense of responsibility in employees which motivates them to be completely engaged in their jobs (Bakker et al., 2007; Kim et al., 2019; Salanova & Schaufeli, 2008). Employees who have JA have the instrumental means and are intrinsically motivated to attain their work goals. As a result, individuals are more likely to be vigorous, dedicated, and absorbed in their professional activities over time (Prieto et al., 2008; Xanthopoulou et al., 2009). Furthermore, nurses who have complete accountability and adequate autonomy to choose what steps they must take to complete their work autonomously, their morale rises, and their self-esteem and self-actualization grow. As a result, nurses are more motivated and engaged at work (Bayoumy, 2019). Therefore, it is hypothesized that:

Hypothesis 2: There is a significant relationship between JA and WE.

JA and Cognitive Appraisal

The importance of JA as a job characteristic has been highlighted in past studies (Adiarani, 2019; H.Keyko et al., 2016; Zhang et al., 2020) that enables organizations to reap positive work resources along with other positive consequences. However, recent studies (A. Ahmed, 2020; Kubicek et al., 2017; Naseer et al., 2019; Zhou, 2020) have found negative aspects of JA as well. Such paradoxical effect of JA may depend upon cognitive appraisal of autonomy as a challenge or a threat (Kubicek et al., 2017; Liu & Li, 2018).

Cognitive appraisal refers to an individual's subjective interpretation of job circumstances as having the potential to promote personal growth, well-being, gain, and development (challenge appraisal [CA]) or to thwart personal growth, well-being, gain, and development (threat appraisal [TA]) (LePine et al., 2005; LePine et al., 2016). JA has the potential to motivate employees by instigating positive outcomes such as growth, valuable rewards, and promotion (Malinowska et al., 2018; Park & Jang, 2017). Employees may view JA as an opportunity to demonstrate their capabilities and excel in their career (Crawford et al., 2010; Saragih, 2011; Zhang et al., 2020; Zhou, 2020) as it allows employees to fulfill their responsibilities with greater discretion (Zhou, 2020). Overall, the focus on positive aspects of JA (i.e.,

potential for personal gain) can result in autonomy being appraised as a challenge. On the contrary, JA increases workload and responsibilities which require more energy, effort, and time (Shahzad, 2019; Taris & Hu, 2020). Due to the responsibilities associated with the autonomous job, employees may feel constrained/drained and find it difficult to fulfill job demands effectively (Naseer et al., 2019). In general, greater JA related to employee's psychological demands and capabilities leads to detrimental effects (Dewa et al., 2011; Taris & Hu, 2020). As it may increase stress levels (Shahzad, 2019; Taris & Hu, 2020) and reduce happiness (Zhou, 2020) which can hinder personal growth (Ahmed, 2020; Webster et al., 2011). In all, focus on negative aspects of JA (i.e., potential for personal loss) can result in the autonomy being appraised as a threat. Hence, it is postulated that:

Hypothesis 3a: There is a significant relationship between JA and (a) CA.

Hypothesis 3b: There is a significant relationship between JA and (b) TA.

Cognitive Appraisal as a Mediator in the Relationship Between JA and WE

Aforementioned arguments corroborate that the perplexing outcome of JA is contingent upon its cognitive appraisal as a challenge or threat by individuals (Lee et al., 2020; Naseer et al., 2019). The mediating role of challenge and TA between stressors and WE has been supported by eminent authors (Kronenwett & Rigotti, 2020; Ma et al., 2021). They revealed that CA of a stressor triggers a positive behavioral response that facilitates WE while TA of a stressor elicits a negative behavioral response that impedes WE (Kronenwett & Rigotti, 2020; Ma et al., 2021).

In line with the above arguments, appraisal of JA as a challenge or threat determines its eventual outcomes. Employees who appraise stressors as a challenge deem that the time and energy they devote will return to something meaningful. They dedicate their time, energy, efforts, and skills to accomplish the assigned work (Crawford et al., 2010) and exhibit higher positive effects at work (e.g., vigor) (Lin et al., 2014). CA encourages employees to enhance their self-resources (Mitchell et al., 2019) and mitigates the pessimistic effect of stress (Li et al., 2020). Such appraisal triggers a more active style of coping and emanates positive emotions that reflect high WE (Crawford et al., 2010).

On the contrary, JA elevates responsibility that requires the employee to show a willingness to cope with complexity and higher decision-making latitude (Mitchell et al., 2019). Employees who perceive that such a task is difficult to attain are inclined to appraise it as a threat (Naseer et al., 2019). TA discourages employees to invest their energy,

time, and personal resources to fulfill job demands (Crawford et al., 2010) as it will further deplete their self-resources (Mitchell et al., 2019). Such appraisal triggers a more passive style of coping (Crawford et al., 2010) and impels negative emotions that result in withdrawal behaviors and little engagement (Li et al., 2020; Mitchell et al., 2019). Therefore, it is hypothesized that the relationship between JA and WE significantly mediated by the cognitive appraisal (challenge or threat appraisals).

Hypothesis 4a: CA significantly mediates the relationship between JA and WE.

Hypothesis 4b: TA significantly mediates the relationship between JA and WE.

Cognitive Appraisal and WE as Mediators in the Relationship Between JA and IWB

Appraisal of JA as a challenge or threat ascertains its eventual outcomes. When a stressor is appraised as a challenge, individuals center their attention on potential benefits and opportunities such as growth, development, promotion, and reward (Crawford et al., 2010; Mitchell et al., 2019). CA triggers positive emotions and encourages the employee to demonstrate higher competency in mastering the challenging situation. Such appraisal gives energy to employees (Lin et al., 2014) to display higher positive effects at work (e.g., vigor) and to be highly engaged at their work (Adiarani, 2019; Ariani, 2019). Vigorous employees are energetic and flexible enough to apply sustained effort on the job without being tired (Ariani, 2015). They work with dedication due to the pride and inspiration they have for their work (Ariani, 2013; Rich et al., 2010; Sekhar et al., 2018). They lose the track of time as they are completely absorbed in their work and cannot detach themselves from the job even after the task is performed (Ariani, 2013). A high level of WE captures an optimistic approach toward work that elevates self-resources (Mitchell et al., 2019). Highly engaged employees are cognitively vigilant and are emotionally and socially involved in their work which influences extra-role behavior such as IWB (Van Zyl et al., 2019). Engaged individuals demonstrate intense attachment to their work. To achieve the task-related goals they enthusiastically invest their valuable resources (i.e., physical and cognitive). Such eagerness and self-investment of individuals turn into extra-role behavior (Christian et al., 2011). At the outset, they concentrate on the tasks related to their job description, and after that they step outside of their basic roles. They perform their task efficiently and free up the resources needed to pursue extra-role activities (Ariani, 2013) such as IWB (Montani et al., 2020).

On the contrary, perception of JA as a threat is subject to higher job demands and depletion of self-resources (Mitchell et al., 2019). Which results in negative stress coping mechanisms (Crawford et al., 2010) and decreases employee engagement at work. Lower levels of engagement cause emotional exhaustion,

burnout, and reduce the desire to engage in extra-role behavior (Chen et al., 2020). Resultantly they tend to use simple strategies and focus on common methods which undermine creative and novel thinking (Byron & Nazarian, 2010) and may hinder IWB. It is therefore postulated that:

Hypothesis 5a: CA and WE significantly mediate the relationship between JS on IWB.

Hypothesis 5b: TA and WE significantly mediate the relationship between JA on IWB.

Study propositions are supported by the Conservation of Resource theory (Hobfoll, 1989; Hobfoll et al., 2018) which postulates that individuals are concerned to gain and sustain resources they value. Any situation that threatens or leads to the loss of such resources may be stressful for individuals and in such circumstances, they strive to protect their resources (Hobfoll, 1989; Hobfoll et al., 2018). Further, the resource investment principle of conservation of resource theory proclaims that when a stressor (i.e., JA) is perceived as a source of resource gain; individuals are motivated to invest their valuable resources (time, energy, effort, etc.) (Garrosa et al., 2011). As they perceive that investment of their available resources will result in resource gain. So they feel challenged and are highly engaged in their work which further provides the energy needed to stimulate IWB.

While, desperation principle of conservation of resource theory (Hobfoll, 1989; Hobfoll et al., 2018) elucidates that when stressor (i.e., JA) is perceived as a source of resource depletion, individuals will neither invest their available resources (i.e., time, energy, and effort) nor they will feel challenged. As they perceive that investment in their resources will result in resource depletion rather than resource gain so they prefer to protect their resources. Resultantly, they will not be engaged in their work and exhibit lower willingness to demonstrate IWB as performing extra-role behaviors require more resources.

The study's overall objectives are as follows:

1. To ascertain the effect of JA on IWB.
2. To examine the relationship between JA and WE.
3. To investigate the association between JA and (a) CA and (b) TA.
4. To examine the mediating role of (a) CA (b) TA between the association of JA and WE.
5. To investigate to see if (a) CA (b) TA and WE mediate the relationship between JA and IWB. See (figure 1 depicting study objectives (Theoretical Framework).

Methods

Design

Drawing on the ontological (the nature of realities one encounters in research) and epistemological (what comprises valid, acceptable, and legitimate knowledge) assumptions (Saunders

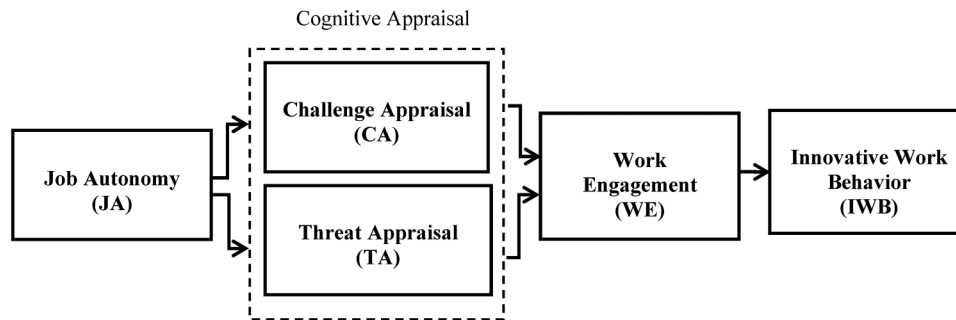


Figure 1. Theoretical framework.

et al., 2007), and positivist approach, the current study is objective and perceptual as hypotheses are derived from literature and based on existing theory (Saunders et al., 2007, 2019).

Research Questions

1. Does JA relate to IWB?
2. Does JA relate to WE?
3. Does (a) CA and (b) TA relates to cognitive appraisal?
4. Do (a) CA (b) TA and WE mediate the relationship between JA and WE?
5. Do (a) CA (b) TA and WE mediate the relationship between JA and IWB?

Sample

Tertiary hospitals of twin cities (Rawalpindi and Islamabad) of Pakistan were included in this study as tertiary hospitals are the largest health care unit where highly specialized services are delivered. These hospitals were selected due to the availability of maximum in-patients beds services for patients. Data were gathered at a particular point in time using self-administered questionnaires. This study includes responses from 326 nurses, based on the simple random sampling technique.

Inclusion/Exclusion Criteria

This study is based on Pakistan's health sector due to the existing state of the country's health care system (particularly public and private hospitals of twin cities; Rawalpindi and Islamabad). The study focused on tertiary hospitals in twin cities since they are the largest health care facilities that offer highly specialized services. These hospitals were chosen because they had the greatest number of in-patient beds, implying that there were more nurses available.

Ethical Consideration

Informed consent was taken before collecting the data by including a few lines elucidating the aim of the study in the

first section of the questionnaire. First, respondents read the informed consent and proceeded if they agree to voluntarily participate in the study. The issue regarding confidentiality was also ensured by developing an anonymous questionnaire survey and included only demographic data.

Statistical Analysis

SPSS and AMOS 21 were used to examine quantitative data in this study. The data were first examined for demographic information on respondents, as well as the mean and *SD*. The measuring model's adequacy was then tested for unidimensionality, reliability, and validity. Structural equation modeling (SEM) was used to investigate the hypothesis. The significance level in this study was chosen at 0.1% ($p \leq .001$).

Measures

In the current study, responses were obtained on a continuum ranging from 1 "strongly disagree" to 7 "strongly agree". Information regarding demographic characteristics (organization type and age) was also obtained. An average score of items was used for analysis. Since English is the official language of Pakistan, all of the scales employed in this study were in English.

JA scale comprised of three items modified by Morris and Venkatesh (2010) based on a job diagnostic survey of Hackman and Oldham (1974) (e.g., "To what extent does your job give you the freedom to perform your task"). The said measure is used by other scholars like Morris and Venkatesh (2010) and Pee and Chua (2016) ($\alpha = .873$).

Cognitive appraisal was measured by a 6-item scale, with three items for CA and three items for TA, adapted from LePine et al. (2016). The scale is designed in a way that a high score will indicate the presence of either challenge or TA, whereas a low score will represent the relative absence of either appraisal (challenge or threat) (LePine et al., 2005; LePine et al., 2016). Sample items include "my growth and well-being are improved because of this job" ($\alpha = .914$) for CA and "my growth and well-being are thwarted because of this job" ($\alpha = .898$) for TA.

WE was assessed by the 9-item scale Utrecht Work Engagement Scale (UWES-9) designed by Schaufeli et al. (2006). Most of the nursing studies used the same scale for measuring nurse's WE (Keyko et al., 2016). This scale is currently used by Jason and Geetha (2019) and Van Zyl et al. (2019). It is a self-reported measure that taps three items for each dimension; vigor (e.g., "At my job, I feel strong and vigorous"), dedication, (e.g., "I am enthusiastic about my work"), and absorption (e.g., "I get carried away by my work") ($\alpha = .810$).

IWB was assessed using a 9-item scale developed by Janssen (2000). This 9-item scale comprises 3 items for each dimension of IWB; idea generation, idea promotion, and idea realization. Sample item includes "I mobilize support for creative ideas" ($\alpha = .852$). Cronbach's alpha of original tool was 0.95 Janssen (2000).

Organization type and age were included as a control variable. Concerning organization type, it was coded as 0 for public hospitals and 1 for private hospitals. While age was coded as 0 for 19–28; 1 for 29–38; 2 for 39–48, and 3 for 49 and above years old nurses.

Results

Sample Characteristics

The descriptive analysis demonstrated that 290 (89%) of the respondents were female nurses while 36 (11%) were males, and the number of male nurses is very low when compared to female nurses around the globe. Globally, there are 9 out of 10 nurses are females (Catton & Iro, 2021). The sample distribution regarding age level is as follows: 233 respondents (72%) were 19–28 years old; 69 respondents (21%) were 29–38 years old; and 24 respondents (7%) were 39–48 years old.

Descriptive statistics of study variables demonstrates the highest average score on JA, that is, 4.99, while least average score on IWB i.e., 3.78. The average score for CA, that is, 4.17, TA, that is, 4.07, and WE, that is, 4.24 was observed above the moderate level. Overall, the average ratings on JA, CA, TA, and WE were close to "moderately agree," indicating that the majority of the nurses have a positive attitude toward these variables. While a low average IWB score indicates that the nurses have a low-level IWB.

Analyzing first-order correlation showed that JA has a low association with CA ($r = 0.39$, $p < .001$), and TA ($r = 0.34$, $p < .001$), whereas the moderate association with WE ($r = 0.40$, $p < .001$) and IWB ($r = 0.56$, $p < .001$). First-order correlation also shows that challenge and threat appraisals are negatively associated at moderate level ($r = -0.43$, $p < .001$); while CA has strong positive relation with WE and IWB ($r = 0.78$, $p < .001$; $r = 0.75$, $p < .001$) respectively. While TA has weak and moderate negative relationship with WE and IWB ($r = -0.43$, $p < .001$; $r = -0.22$, $p < .001$), respectively. Intercorrelation also exhibits a strong positive relationship between WE and IWB ($r = 0.74$, $p < .001$) (Table 1).

Data were analyzed using SPSS and Amos 21. To validate the measurement model confirmatory factor analysis (CFA) was performed. The CFA assesses the unidimensionality, validity, and reliability of a latent construct. It is essential to perform CFA for all latent constructs involved in the study before modeling their interrelationship in a SEM. In the first step, the adequacy of the measurement model was examined for unidimensionality, reliability, and validity. Unidimensionality was assessed through the five-factor model. The five-factor model was assessed and ensured by assigning factors to their corresponding latent variables, as factor loading of all items was greater than 0.6 (Figure 2). Reliability is the degree to which the measurement will yield consistent results. It can be assessed by internal and composite reliability (CR). The inter-item consistency and CR of the instrument were tested. To establish the reliability required value of Cronbach's alpha (α) and CR is at least 0.7 (Ursachi et al., 2015). The value of α and CR of all variables was greater than 0.7 (Table 1), therefore, all scales used in this study were reliable and all items accurately measured their respective constructs. Validity is the ability of the instrument to measure what is supposed to be measured for a latent construct. Each measurement model requires establishing three types of validities namely; convergent validity, discriminant validity, and construct validity.

Convergent validity was assessed and established through average variance extracted (AVE). The minimum required value of AVE for each construct is 0.5 (Awang, 2014) and analysis revealed that all constructs achieved this minimum level and have good convergent validity (Table 1). To examine the discriminant validity heterotrait-monotrait (HTMT) ratios were computed and found to be less than the threshold value of 0.85 (Henseler et al., 2015) therefore discriminant validity was also confirmed (Table 1). It was also assessed by comparing the square root of AVE of all constructs to their respective correlations and found to be greater than their respective correlations which depict that constructs are different from each other (Awang, 2014) (Table 1).

Lastly, construct validity was assured through fitness indexes for the measurement model and found to achieve the required level as suggested by (Awang, 2014) [χ^2 (308) = 508.932, $p < .000$; root mean square error of approximation (RMSEA) = 0.045; standardized root mean square residual (SRMR) = 0.043; goodness-of-fit index (GFI) = 0.898; incremental fit index (IFI) = 0.966; comparative fit index (CFI) = 0.966].

Additionally, values of VIF and Tolerance scores ranged from 1.712 to 2.225 (less than 10) and 0.449 to 0.584 (above 0.2), respectively, thus empirically validating the absence of multicollinearity.

The data for this research was collected from a single source that may likely result in common method bias (CMB). Therefore, Harman's single factor test was performed to check the intensity of CMB (Podsakoff &

Table 1. Reliability, Validity, Mean, SD, and Intercorrelations of Study Variables (n = 326).

Variables	Min. loading	IR (α)	CR	AVE	Mean	SD	JA	CA	TA	WE	IWB	HTMT				
												1	2	3	4	
1-JA	0.80	0.873	0.87	0.70	4.989	1.486	0.837									
2-CA	0.86	0.914	0.92	0.78	4.172	1.541	0.39***	0.883				0.389				
3-TA	0.82	0.898	0.90	0.75	4.066	1.835	0.34***	-0.43***	0.866			0.344	-0.431			
4-WE	0.80	0.810	0.86	0.68	4.239	1.342	0.40***	0.78***	-0.43***	0.825		0.380	0.740	-0.408		
5-IWB	0.84	0.852	0.90	0.75	3.779	1.477	0.56***	0.75***	-0.22***	0.74***	0.866	0.535	0.718	-0.216	0.676	

(n = 326) R = ***p < .001.

Note. AVE = average variance extracted; CA = challenge appraisal; CR = composite reliability; HTMT = heterotrait-monotrait; IR (α) = internal reliability; IWB = innovative work behavior; SD = standard deviation; JA = job Autonomy; TA = threat appraisal; WE = work engagement. Values in bold are square root of the AVEs and off-diagonal values are correlations between the constructs.

Organ, 1986). An unrotated factor analysis extracting a single factor explained 39.902% (below 50%) of the total variance, therefore, CMB was not a threat for analysis.

Research Questions Results

The results of hypothesized relationships are shown in Table 2 also see Figure 3. In contrast to traditional methodologies, SEM was utilized to examine the research hypothesis since this multivariate technique addresses measurement error while statistically analyzing the data (Jourdain & Chênevert, 2010). Furthermore, based on 2,000 bootstrap samples, a 95% confidence interval (CI) for indirect effects was constructed. First structural model was tested by including control variables (organization type and age) but did not find substantial effect ($\gamma = 0.000$, $p > .001$), ($\gamma = -0.032$, $p > .001$), therefore, these variables were excluded from structural model for parsimonious concern.

Hypotheses 1 and 2 stated that JA is significantly related to IWB and WE, respectively. Results revealed that there is positive direct effect of JA on IWB ($\gamma = 0.301$, $p < .001$), and WE ($\gamma = 0.240$, $p < .001$), supporting Hypotheses 1 and 2.

Hypotheses 3a and 3b proclaimed that JA is directly related to (a) CA and (b) TA. According to the results, JA has a statistically significant direct influence on CA ($\gamma = 0.350$, $p < .001$), and TA ($\gamma = 0.316$, $p < .001$), respectively, supporting Hypotheses 3a and 3b.

Hypothesis 4a posited that JA is positively associated with WE through CA. According to the findings CA has a significant direct effect on WE. ($\gamma = 0.50$, $p < .001$). The positive indirect effect of JA on WE through CA was also statistically significant and ($\rho = .158$, 95% CI = .104 to .232). Whereas, Hypothesis 4b predicted that JA is associated with WE through TA. The results revealed a statistically significant direct relationship between TA and WE ($\gamma = -0.24$, $p < .001$). The negative indirect effect of JA on WE through TA was also statistically significant and supported ($\rho = -0.067$, 95% CI = -.112, to -.033). Thus Hypotheses 4a and 4b are accepted.

Hypothesis 5a stipulated that there is a positive indirect effect of JA on IWB through CA and WE. The findings demonstrate the direct effect of WE on IWB was significant ($\gamma = 0.51$, $p < .001$), and the positive indirect effect of JA on IWB through CA and WE was also found to be statistically significant and consistent with our expectations ($\rho = .089$, 95% CI = .055 to .141) ($\rho = -.038$, 95% CI = -.064 to -.019), respectively. Whereas, Hypothesis 5b stipulated that there is a negative indirect effect of JA on IWB through TA and WE. The direct effect of WE on IWB was significant ($\gamma = 0.51$, $p < .001$), and the negative indirect effect of JA on IWB through TA and WE was also found to be statistically significant and consistent with our expectations ($\rho = -.038$, 95% CI = -.064 to -.019).

Additional Analysis: A situation that an individual cannot control generally causes stress like the COVID-19 pandemic.

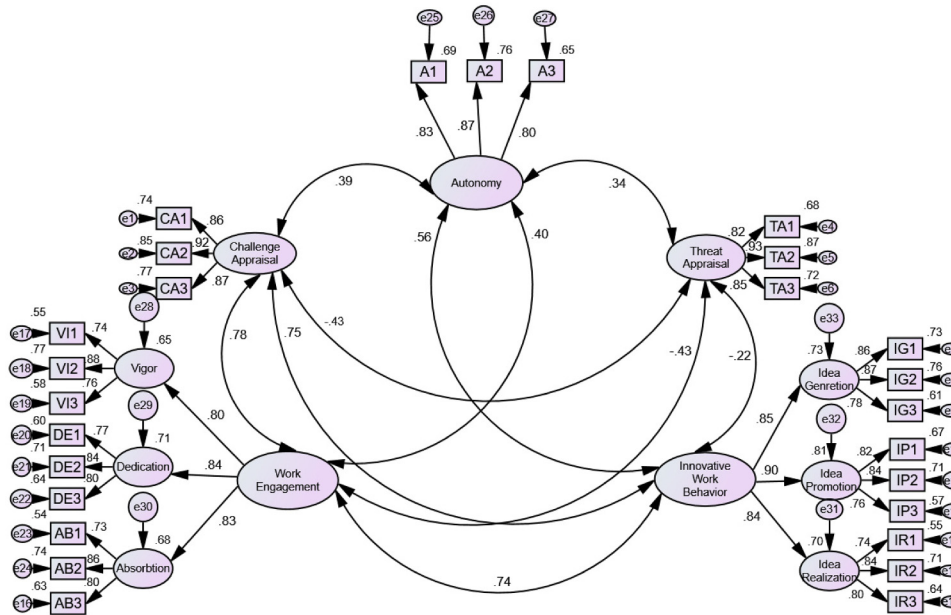


Figure 2. Factor loadings of constructs.

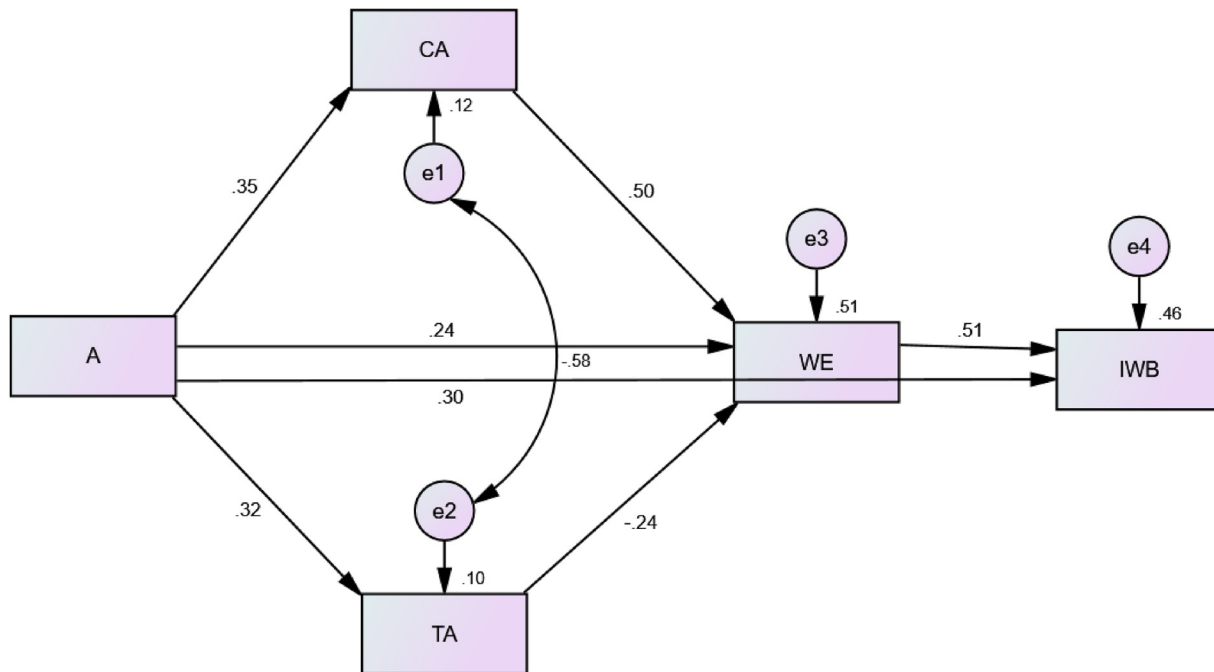


Figure 3. Structural model.

Note. CA = challenge appraisal; IWB = innovative work behavior; JA = job autonomy; TA = threat appraisal; WE = Work Engagement.

Health care professionals across the globe are under immense stress due to COVID-19 (Irshad et al., 2020; Reznik et al., 2020). Indeed, nurses are observed to be the most troubled and stressed professionals among others due to myriad conditions. As they have to take care of COVID-19 patients around the clock (Mo et al., 2020) and the unavailability of protective costumes and equipment made them worry about

being infected (Alharbi et al., 2020; Pappa et al., 2020). Such an erratic and exhaustive situation has increased the fear of COVID-19 among nurses (Santos et al., 2019). Fear of COVID-19 being a stressor constantly depleting valuable resources of nurses (Hoseinabadi et al., 2020; Irshad et al., 2020; Taylor et al., 2020; Zheng et al., 2021) and impacting the well-being of people worldwide (Reznik et al., 2020).

Table 2. Structural Model (n = 326).

Variables	β	SE	Bootstrap LLCI	Bootstrap ULCI
Direct Effect				
H ₁ JA → IWB	.301***	.043		
H ₂ JA → WE	.240***	.045		
H _{3a} JA → CA	.350***	.054		
H _{3b} JA → TA	.316***	.065		
Indirect Effect				
H _{4a} JA → CA → WE	.158***	.032	.104	.232
H _{4b} JA → TA → WE	-.067**	.020	-.112	-.033
H _{5a} JA → CA → WE → IWB	.089**	.021	.055	.141
H _{5b} JA TA → WE → IWB	-.038**	.011	-.064	-.019

(n = 326) R = ***p < .001.

Note. CA = challenge appraisal; IWB = innovative work behavior; JA = job autonomy; TA = threat appraisal; WE = work engagement.

Since stressors have a significant impact on extra-role behavior, therefore, in this study, fear of COVID-19 was tested by multigroup analysis. A 7-item scale called the FCV-19S (Ahorsu et al., 2020) was employed to measure COVID-19 fear. Sample item is “I am most afraid of coronavirus-19” ($\alpha = .789$). Groups were coded as 0 for those who scored low for fear of COVID-19 and 1 for those who scored high for fear of COVID-19. It was hypothesized that the relationship between JA IWB is stronger for those who have not felt the fear of COVID-19 and weaker for those who have felt the fear of COVID-19.

The effect of fear of COVID-19 was examined through the chi-square difference test with the unconstrained and constrained models and found no significant difference. Though beta value for those who report no fear of COVID-19 ($\beta = 0.40$) is different from a group of nurses who reported fear of COVID-19 ($\beta = 0.26$), but chi-square difference test was not significant.

Discussion

The current study was intended to examine the direct and indirect relationship between JA and IWB through cognitive appraisal and WE.

The supposition that there is a significant and positive effect of JA on IWB and WE was accepted. The results of the current study are compatible with the findings of (Agarwal & Gupta, 2018; Bayoumy, 2019; Hammond et al., 2011; Kim et al., 2019; Nurjaman et al., 2019; Werleman, 2016) and provide empirical evidence of a relationship between JA and IWB and WE in the nursing context. The third assumption that there is a significant impact of JA on (a) CA or (b) TA also comes out to be accepted. The present research is aligned with the arguments of Naseer et al. (2019) and Noesgaard and Hansen (2017)

who proclaimed that job characteristics can be appraised as a challenge and threat simultaneously. Overall findings indicated that JA explains both functional and dysfunctional outcomes of individuals through their cognitive appraisal, providing support to the arguments of Naseer et al. (2019) and Taris and Hu (2020). The focus of an individual on positive aspects of JA (i.e., resource accumulation or resource gain) promotes its appraisal as a challenge that enhances employee engagement at their work which promotes IWB. Whereas the focus of an individual on negative aspects of JA (i.e., depletion of resources) promotes its appraisal as a threat which leads to the taxing experience that reduces employee's WE and prohibits employees to invest their energy in IWB. These findings provide support specifically to the study conducted by Ahmed (2020) and Mitchell et al. (2019) which proclaimed that stressor (i.e., JA) is used at will which determines its eventual outcomes. Appraisal as a challenge fosters a state of engagement that motivates extra-role behavior (i.e., IWB) and appraisal as a threat deters WE that discourages extra-role behavior (i.e., IWB) of employees. For that reason, it is insinuated that JA is not a silver bullet for motivating every employee rather it depends upon an individual's frame of reference and job attitudes that how they appraise/ perceive their job characteristics (Fried & Ferris, 1987).

Furthermore, the effect of fear of COVID-19 on IWB as a covariate was not significant. Although COVID-19 pandemic has added to the stress on nurses and due to this additional stress, IWB may decline. Therefore, health care organizations should take measures to reduce stress among nurses to improve their extra-role behavior.

Strengths and Limitations

This study has several strengths. First, theoretically, it refines and augments knowledge concerning Conservation of Resources Theory by examining the role of cognitive appraisal and WE, while explaining the association between JA and IWB. Since the perception of resources is the foundation of cognitive appraisal (Hobfoll et al., 2018) that determines why and when someone interprets a job as a challenge or threat and how this appraisal leads to differential effects/outcomes (Li et al., 2020). Accordingly, this study offers an alternative account of the inconsistencies regarding the differential effect of JA on outcomes as suggested by Mitchell et al. (2019), Li et al. (2020), and Taris and Hu (2020) and offers support to the job design literature that argues that JA can be perceived as both challenging and threatening and can yield both positive and negative effects.

Second, the effects of cognitive appraisal on work-related outcomes in high-risk jobs as performed by nurses are neglected (Gomes et al., 2016). Likewise, previous objective categorization of JA either as a challenge or hindrance stressor has ignored subjective interpretation of JA by individuals. The current study enriches literature by considering the

possibility of appraising a single stressor specifically JA as both challenging and threatening and thus identifying its differential effects.

Finally, in the field of health care, there is a paucity of research on IWB and its antecedents, particularly in Asian countries. There is also limited empirical information clarifying the links between job characteristics and their outcomes (IWB), as well as the underlying processes via which job characteristics (e.g., autonomy) influence outcomes (Ahmed, 2020). As a result, this study adds to the body of knowledge on IWB among health care workers, particularly nurses.

The possible limitation of the current study is ambiguity regarding causal inferences, as mediators; cognitive appraisal and WE were captured at a single point of time following a cross-sectional study design. Furthermore, a sample of this study is not representative of overall Pakistan's nurses, as we included nurses working in the tertiary hospital of twin cities (Rawalpindi and Islamabad) exclusively hence lacking generalizability of the results in diverse health care settings.

Since our study has indicted dual effects of JA (as a stressor), therefore in the future potential moderators might be considered. Such as age, personality traits, need for autonomy, self-efficacy, perceived organizational support, ambidexterity leadership, and leadership autonomy support since these variables have the potential to influence the stress process. Second, our study has included individual-level antecedents of IWB, in the future group and organizational-level antecedents can also be included. Lastly, the stress caused due to the COVID-19 pandemic may have affected nurses' performance, so the researchers should explore potential variables that can mitigate the negative effects of COVID-19 to promote extra-role behavior.

Implications for Practice

The practical implication of this study is the inclusion of cognitive appraisal of JA that has a significant impact on WE and IWB. Nursing management must be aware of the importance of cognitive appraisal and what it entails for nurses. So that they may create policies for nurse's training and development, and therefore they can see work autonomy as a challenge rather than a threat. Because CA has the ability to boost employee WE, which stimulates IWB, TA, on the other hand, diminishes job engagement, which further stifles IWB. Furthermore, crossover of resources implies that highly engaged employees due to the availability of adequate resources are likely to influence their partners, team, department, and the organization that would result in extra-role behavior (i.e., IWB) around the organization (Hobfoll et al., 2018). As nurses' IWB is among the most effective measures that health care organizations may employ (Xerri & Reid, 2018) to improve the quality of services (Ahmed et al., 2019) given the escalation of nursing capacity

shortages (Xerri & Reid, 2018) so they must take steps to improve nurses' engagement and IWB.

Conclusion

Our study confirms that JA a unique stressor that can be a double-edged sword, encouraging both positive and negative outcomes. As CA of JA enhances WE and IWB while TA hinders employee engagement IWB. Therefore nursing management should find ways (i.e., training for cultivating personal resources) to influence nurse's appraisal of JA as a challenge rather than a threat to improve their extra-role behavior.

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References

- Adiarani, P. G. (2019). The effects of job characteristics on work engagement. *RJOAS, 1*(85), 475–479. <https://doi.org/10.18551/rjoas.2019-01.58>
- Afsar, B. (2016). The impact of person-organization fit on innovative work behavior: The mediating effect of knowledge sharing behavior. *International Journal of Health Care Quality Assurance, 29*(2), 104–122. <https://doi.org/10.1108/IJHCQA-01-2015-0017>
- Agarwal, U. A., & Gupta, V. (2018). Relationships between job characteristics, work engagement, conscientiousness and managers' turnover intentions: A moderated-mediation analysis. *Personnel Review, 47*(2), 353–377. <https://doi.org/10.1108/PR-09-2016-0229>
- Ahmed, A. (2020). A missing link between job autonomy and unethical behavior A missing link between job autonomy and unethical behavior. *Jurnal Ekonomi, 19*(1), 95–118. <https://doi.org/10.15408/etk.v19i1.12391>
- Ahmed, A. K., Ata, A. A., & Abd-elhamid, Z. N. (2019). Relationship between the leadership behaviors, organizational climate, and innovative work behavior among nurses. *American Journal of Nursing Research, 7*(5), 870–878. <https://doi.org/10.12691/ajnr-7-5-20>
- Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: Development and initial validation. *International Journal of Mental Health and Addiction, 1*(9), 1537–1545. <https://doi.org/10.1007/s11469-020-00270-8>
- Akhtar, M., Syed, F., Husnain, M., & Naseer, S. (2020). Person-organization fit and innovative work behavior: The mediating role of perceived organizational support, affective commitment and trust. *Pakistan Journal of Commerce and Social*

- Sciences*, 13(2), 311–333. <https://www.econstor.eu/bitstream/10419/200994/1/4339.pdf>
- Alharbi, C., Jackson, D., & Usher, K. (2020). The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *Journal of Clinical Nursing*, 4, 2762–2764. <https://doi.org/10.1111/jocn.15314>
- AllahBakhshian, M., Alimohammadi, N., Taleghani, F., Yasdan Nik, A., Abbasi, S., & Gholizadeh, L. (2017). Barriers to intensive care unit nurses' autonomy in Iran: A qualitative study. *Nursing Outlook*, 65(4), 392–399. <https://doi.org/10.1016/j.outlook.2016.12.004>
- Ariani, D. W. (2013). The relationship between employee engagement, organizational citizenship behavior, and counterproductive work behavior. *International Journal of Business Administration*, 4(2), 46–56. <https://doi.org/10.5430/ijba.v4n2p46>
- Ariani, D. W. (2015). Employee satisfaction and service quality: Is there relations? *International Journal of Business Research and Management*, 6(3), 33–44. <https://www.cscjournals.org/Issue3/IBRM-187>
- Ariani, D. W. (2019). Basic psychological needs as predictors of burnout and engagement. *Journal of Psychological & Educational Research*, 27(2), 51–74. <https://www.proquest.com/docview/2315014499>
- Asurakkody, T. A., & Shin, S. Y. (2018). Innovative behavior in nursing context: A concept analysis. *Asian Nursing Research*, 12(4), 237–244. <https://doi.org/10.1016/j.anr.2018.11.003>
- Awang, Z. (2014). Validating the Measurement Model : Cfa. In *Structural Equation Modelling using amos grafic* (pp. 54–73).
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, 99(2), 274–284. <https://doi.org/10.1037/0022-0663.99.2.274>
- Bayoumy, S. A. (2019). Relationship between job characteristics and work engagement among nursing staff. *International Journal of Nursing Didactics*, 9(01), 24–29. <https://doi.org/10.15520/ijnd.v9i01.2406>
- Böckerman, P., Bryson, A., Kauhanen, A., & Kangasniemi, M. (2020). Does job design make workers happy? *Scottish Journal of Political Economy*, 67(1), 31–52. <https://doi.org/10.1111/sjpe.12211>
- Byron, K., & Nazarian, D. (2010). The relationship between stressors and creativity : A meta-analysis examining competing theoretical models. *Journal of Applied Psychology*, 95(1), 201–212. <https://doi.org/10.1037/a0017868>
- Cangialosi, N., Battistelli, A., & Odoardi, C. (2021). Designing innovative jobs: a fuzzy-set configurational analysis of job characteristics. *Personnel Review*. Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/PR-02-2021-0105>
- Catton, H., & Iro, E. (2021). How to reposition the nursing profession for a post-COVID age. *BMJ*, 373(1105), 1–4. <https://doi.org/10.1136/bmj.n1105>
- Chen, I.-C., Peng, N. L., & Ann, C. C. (2020). I AM TIRED “ - job burnout and citizenship behaviour in an organization: Occupational commitment as a mediator in a Malaysian private. *International Dialogues on Education: Past and Present*, 7(2), 80–93. <https://files.eric.ed.gov/fulltext/EJ1278570.pdf>
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64(1), 89–136. <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Coelho, F., & Augusto, M. (2010). Job characteristics and the creativity of frontline service employees. *Journal of Service Research*, 13(4), 426–438. <https://doi.org/10.1177/1094670510369379>
- Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, 95(5), 834–848. <https://doi.org/10.1037/a0019364>
- Deegahawature, M. (2014). Managers' inclination towards open innovation: Effect of job characteristics. *European Journal of Business and Management*, 6(1), 8–16. <http://www.iiste.org/Journals/index.php/EJBM/article/view/10202>
- De Spiegelaere, S., Gyes, G. V., Witte, H. D., & Hootegem, G. V. (2015). Job design, work engagement and innovative work behavior: A multi-level study on Karasek's learning hypothesis. *Management Revue*, 26(2), 123–137. <https://doi.org/10.1688/mrev-2015-02-DeSpiegelaere>
- De Spiegelaere, S., Van Gyes, G., & Van Hootegem, G. (2012). Job design and innovative work behavior: One size does not fit all types of employees. *Journal of Entrepreneurship, Management and Innovation*, 8(4), 5–20. <https://doi.org/10.7341/2012841>
- Dewa, C. S., Thompson, A. H., & Jacobs, P. (2011). Relationships between job stress and worker perceived responsibilities and job characteristics. *International Journal of Occupational and Environmental Medicine*, 2(1), 37–46. <https://pubmed.ncbi.nlm.nih.gov/23022817/>
- Dy Bunpin, J. J., Chapman, S., Blegen, M., & Spetz, J. (2016). Differences in innovative behavior among hospital-based registered nurses. *Journal of Nursing Administration*, 46(3), 122–127. <https://doi.org/10.1097/NNA.0000000000000310>
- Fried, Y., & Ferris, G. R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, 40(2), 287–322. <https://doi.org/10.1111/j.1744-6570.1987.tb00605.x>
- Garrosa, E., Moreno-Jiménez, B., Rodríguez-Muñoz, A., & Rodríguez-Carvajal, R. (2011). Role stress and personal resources in nursing: A cross-sectional study of burnout and engagement. *International Journal of Nursing Studies*, 48(4), 479–489. <https://doi.org/10.1016/j.ijnurstu.2010.08.004>
- Ghafoor, Y., Yaqoob, A., Bilal, A., & Ghafoor, M. S. (2021). Impact of nurse shortage on patient care. *Saudi Journal of Nursing and Health Care*, 4(4), 114–119. <https://doi.org/10.36348/sjnhc.2021.v04i04.003>
- Gomes, A. R., Faria, S., & Lopes, H. (2016). Stress and psychological health: Testing the mediating role of cognitive appraisal. *Western Journal of Nursing Research*, 38(11), 1448–1468. <https://doi.org/10.1177/0193945916654666>
- González-Morales, M. G., & Neves, P. (2015). When stressors make you work: Mechanisms linking challenge stressors to performance. *Work and Stress*, 29(3), 213–229. <https://doi.org/10.1080/02678373.2015.1074628>
- Hackman, J. R., & Oldham, G. R. (1974). The Job Diagnostic Survey: An Instrument for the Diagnosis of Jobs and the Evaluation of Job Redesign Projects. Report No. 4, Yale University, Department of Administration Science, New Haven, CT., 1.
- Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 5(1), 90–105. <https://doi.org/10.1037/a0018556>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural

- equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>
- Hobfoll, S. E., Halbesleben, J., Neveu, J.-P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, 5(1), 103–128. <https://doi.org/10.1146/annurev-orgpsych-032117-104640>
- Hoseinabadi, T. S., Kakhki, S., Teimori, G., & Nayyeri, S. (2020). Burnout and its influencing factors between frontline nurses and nurses from other wards during the outbreak of coronavirus disease -COVID-19- in Iran. *Investigacion y Educacion En Enfermeria*, 38(2), 19–30. <http://www.scielo.org.co/pdf/iee/v38n2/2216-0280-iee-38-02-e3.pdf>
- International council of nurses (2020). The Global Nursing shortage. 13–17.
- Irshad, M., Khattak, S. A., Hassan, M. M., Majeed, M., & Bashir, S. (2020). How perceived threat of COVID-19 causes turnover intention among Pakistani nurses : A moderation and mediation analysis. *International Journal of Mental Health Nursing*, 30(1), 350. <https://doi.org/10.1111/inm.12775>
- Janssen (2000). Job demands, perceptions of effort-reward fairness and innovative work behavior. *Journal of Occupational and Organizational Psychology*, 73(3), 287–302. <https://doi.org/10.1348/096317900167038>
- Jason, V., & Geetha, S. N. (2019). Regulatory focus and innovative work behavior: The role of work engagement. *Current Psychology*, 40(6), 2791–2803. <https://doi.org/10.1007/s12144-019-00220-1>
- Jourdain, G., & Chênevert, D. (2010). Job demands-resources, burnout and intention to leave the nursing profession: A questionnaire survey. *International Journal of Nursing Studies*, 47(6), 709–722. <https://doi.org/10.1016/j.ijnurstu.2009.11.007>
- Keyko, K., Cummings, G. G., Yonge, O., & Wong, C. A. (2016). Work engagement in professional nursing practice: A systematic review. *International Journal of Nursing Studies*, 61(9), 142–164. <https://doi.org/10.1016/j.ijnurstu.2016.06.003>
- Khuwaja, H. M. A. (2021). Phasing out diploma in nursing: Merits and implications on nursing education in Pakistan. *Journal of the Pakistan Medical Association*, 71(3), 1047–1048. <https://doi.org/10.47391/JPMA.463>
- Kim, W., Han, S. J., & Park, J. (2019). Is the role of work engagement essential to employee performance or ‘nice to have’? *Sustainability*, 11(4), 1050. <https://doi.org/10.3390/su11041050>
- Kronenwett, M., & Rigotti, T. (2020). All’s well that ends well!? Moderating effects of goal progress on the relation between challenge and hindrance appraisal and well-being. *Journal of Managerial Psychology* 37(5), 444–466. <https://doi.org/10.1108/JMP-11-2019-0618>
- Kubicek, B., Paškvan, M., & Bunner, J. (2017). Job demands in a changing world of work: Impact on workers’ health and performance and implications for research and practice, 1–169. <https://doi.org/10.1007/978-3-319-54678-0>
- Kunie, K., Kawakami, N., Shimazu, A., Yonekura, Y., & Miyamoto, Y. (2017). The relationship between work engagement and psychological distress of hospital nurses and the perceived communication behaviors of their nurse managers: A cross-sectional survey. *International Journal of Nursing Studies*, 71(6), 115–124. <https://doi.org/10.1016/j.ijnurstu.2017.03.011>
- Kwon, K., & Kim, T. (2020). An integrative literature review of employee engagement and innovative behavior: Revisiting the JD-R model. *Human Resource Management Review*, 30(2), 100704. <https://doi.org/10.1016/j.hrmr.2019.100704>
- Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford University Press.
- Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. Springer.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Lee, J. Y., Rocco, T. S., & Shuck, B. (2020). What is a resource: Toward a taxonomy of resources for employee engagement. *Human Resource Development Review*, 19(1), 5–38. <https://doi.org/10.1177/1534484319853100>
- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor-hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, 48(5), 764–775. <https://doi.org/10.5465/AMJ.2005.18803921>
- LePine, M. A., Zhang, Y., Crawford, E. R., & Rich, B. L. (2016). Turning their pain to gain: Charismatic leader influence on follower stress appraisal and job performance. *Academy of Management Journal*, 59(3), 1036–1059. <https://doi.org/10.5465/amj.2013.0778>
- Li, P., Taris, T. W., & Peeters, M. C. W. (2020). Challenge and hindrance appraisals of job demands: One man’s meat, another man’s poison? *Anxiety, Stress and Coping*, 33(1), 31–46. <https://doi.org/10.1080/10615806.2019.1673133>
- Lin, S. H., Wu, C. H., Chen, M. Y., & Chen, L. H. (2014). Why employees with higher challenging appraisals style are more affectively engaged at work? The role of challenging stressors: A moderated mediation model. *International Journal of Psychology*, 49(5), 390–396. <https://doi.org/10.1002/ijop.12064>
- Liu, C., & Li, H. (2018). Stressors and stressor appraisals: The moderating effect of task efficacy. *Journal of Business and Psychology*, 33(1), 141–154. <https://doi.org/10.1007/s10869-016-9483-4>
- Ma, J., Liu, C., Peng, Y., & Xu, X. (2021). How do employees appraise challenge and hindrance stressors? Uncovering the double-edged effect of conscientiousness. *Journal of Occupational Health Psychology*, 26(3), 243–257. <https://doi.org/10.1037/ocp0000275>
- Malinowska, D., Tokarz, A., & Wardzichowska, A. (2018). Job autonomy in relation to work engagement and workaholism : Mediation of autonomous and controlled work motivation. *International Journal of Occupational Medicine and Environmental Health*, 31(4), 445–458. <https://doi.org/10.13075/ijomeh.1896.01197>
- McKenna, J., & Jeske, D. (2021). Ethical leadership and decision authority effects on nurses’ engagement, exhaustion, and turnover intention. *Journal of Advanced Nursing*, 77(1), 198–206. <https://doi.org/10.1111/jan.14591>
- Mitchell, M. S., Greenbaum, R. L., Vogel, R. M., Mawritz, M. B., & Keating, D. J. (2019). Can you handle the pressure? The effect of performance pressure on stress appraisals, self-regulation, and behavior. *Academy of Management Journal*, 62(2), 531–552. <https://doi.org/10.5465/amj.2016.0646>

- Mo, Y. M., Nurse, C., Deng, L., Nurse, H., Zhang, L., Nurse, H., Lang, Q., Nurse, H., Liao, C., Nurse, H., Bm, N. W., Nurse, H., Qin, M., Huiqiao, C., & Mm, H. (2020). *Journal of Nursing Management*, 28(5), 1002–1009. <https://doi.org/10.1111/jonm.13014>
- Mohammed, S., Peter, E., Killackey, T., & Maciver, J. (2021). The “nurse as hero” discourse in the COVID-19 pandemic: A post-structural discourse analysis. *International Journal of Nursing Studies*, 117, 103887. <https://doi.org/10.1016/j.ijnurstu.2021.103887>
- Montani, F., Vandenberghe, C., Khedhaouria, A., & Courcy, F. (2020). Examining the inverted U-shaped relationship between workload and innovative work behavior: The role of work engagement and mindfulness. *Human Relations*, 73(1), 59–93. <https://doi.org/10.1177/0018726718819055>
- Morris, M. G., & Venkatesh, V. (2010). Job characteristics and job satisfaction: Understanding the role of enterprise resource planning system implementation. *MIS Quarterly: Management Information Systems*, 34(1), 143–161. <https://doi.org/10.2307/20721418>
- Naseer, S., Donia, M. B. L., Syed, F., & Bashir, F. (2019). Too much of a good thing: The interactive effects of cultural values and core job characteristics on hindrance stressors and employee performance outcomes. *Human Resource Management*, 59(3), 271–289. <https://doi.org/10.1002/hrm.21993>
- Noesgaard, M. S., & Hansen, J. R. (2017). Work engagement in the public service context : The dual perceptions of job characteristics. *International Journal of Public Administration*, 41(13), 1047–1060. <https://doi.org/10.1080/01900692.2017.1318401>
- Nurjaman, K., Marta, M. S., Eliyana, A., Kurniasari, D., & Kurniasari, D. (2019). Proactive work behavior and innovative work behavior: Moderating effect of job characteristics. *Humanities and Social Sciences Reviews*, 7(6), 373–379. <https://doi.org/10.18510/hssr.2019.7663>
- Ohly, S., & Fritz, C. (2010). Work characteristics, challenge appraisal, creativity, and proactive behavior: A multi-level study. *Journal of Organizational Behavior*, 31(4), 543–565. <https://doi.org/10.1002/job.633>
- Pappa, S., Ntella, V., Giannakas, T., & Giannakoulis, V. G. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, Behavior, and Immunity*, 88, 901–907. <https://doi.org/10.1016/j.bbi.2020.05.026>
- Park, R., & Jang, S. J. (2017). Mediating role of perceived supervisor support in the relationship between job autonomy and mental health: Moderating role of value–means fit. *International Journal of Human Resource Management*, 28(5), 703–723. <https://doi.org/10.1080/09585192.2015.1109536>
- Podsakoff, P. M., & Organ, D. W. (1986). Self-Reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544. <https://doi.org/10.1177/014920638601200408>
- Pee, L. G., & Chua, A. Y. (2016). Duration, frequency, and diversity of knowledge contribution: Differential effects of job characteristics. *Information & Management*, 53(4), 435–446. <https://doi.org/10.1016/j.im.2015.10.009>
- Prem, R., Ohly, S., Kubicek, B., & Korunka, C. (2017). Thriving on challenge stressors? Exploring time pressure and learning demands as antecedents of thriving at work. *Journal of Organizational Behavior*, 38(1), 108–123. <https://doi.org/10.1002/job>
- Prieto, L. L., Soria, M. S., Martínez, I. M., & Schaufeli, W. (2008). Extension of the job demands-resources model in the prediction of burnout and engagement among teachers over time. *Psicothema*, 20(3), 354–360. <https://www.psicothema.com/pdf/3492.pdf>
- Pursio, K., Kankkunen, P., Sanner-Stiehr, E., & Kvist, T. (2021). Professional autonomy in nursing: An integrative review. *Journal of Nursing Management*, January, 1–13. <https://doi.org/10.1111/jonm.13282>
- Reznik, A., Gritsenko, V., Konstantinov, V., Khamenka, N., & Isralowitz, R. (2020). COVID-19 Fear in Eastern Europe : Validation of the fear of COVID-19 scale. *International Journal of Mental Health and Addiction*, 12, 1–6. <https://doi.org/10.1007/s11469-020-00283-3>
- Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617–635. <https://doi.org/10.5465/amj.2010.51468988>
- Salanova, M., & Schaufeli, W. B. (2008). Job resources, engagement and proactive behaviour: A cross-national study. *The International Journal of Human Resource Management*, 19(1), 116–131. <https://www.wilmarshaufeli.nl/publications/Schaufeli/287.pdf>
- Santos, A., Chambel, M. J., & Castanheira, F. (2019). Wellbeing among hospital nurses: a cross-sectional study of the contributions of relational job characteristics. *International Journal of Nursing Studies*, 105, 103438. <https://doi.org/10.1016/j.ijnurstu.2019.103438>
- Saragih, S. (2011). The effects of job autonomy on work outcomes: Self efficacy as an intervening variable. *International Research Journal of Business Studies*, 4(3), 203–215. <https://doi.org/10.21632/irjbs.4.3.203-215>
- Saunders, M., Lewis, P., & Thornhill, A. (2007). Mark Saunders Adrian Thornhill.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). Chapter 4: Understanding research philosophy and approaches to theory development. In *Research Methods for Business Students* (Issue March), 128–171.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701–716. <https://doi.org/10.1177/0013164405282471>
- Searle, B. J., & Auton, J. (2015). The merits of measuring challenge and hindrance appraisals. *Anxiety, Stress, & Coping*, 28(2), 121–143. <https://doi.org/10.1080/10615806.2014.931378>
- Sekhar, C., Patwardhan, M., & Vyas, V. (2018). Linking work engagement to job performance through flexible human resource management. *Advances in Developing Human Resources*, 20(1), 72–87. <https://doi.org/10.1177/1523422317743250>
- Shahzad, M. B. (2019). Psychological capital as a moderator in the relationship between job autonomy and job stress: The case of Pakistan financial services firms. *Vestnik of Saint Petersburg University, Management*, 18(4), 614–633. <https://doi.org/10.21638/11701/spbu08.2019.406>
- Shih, H. A., & Susanto, E. (2017). Perceived identifiability, shared responsibility and innovative work behavior. *International Journal of Human Resource Management*, 28(22), 3109–3127. <https://doi.org/10.1080/09585192.2016.1143860>
- Sönmez, B., & Yıldırım, A. (2019). The mediating role of autonomy in the effect of pro-innovation climate and supervisor supportiveness on innovative behavior of nurses. *European Journal*

- of *Innovation Management*, 22(1), 41–58. <https://doi.org/10.1108/EJIM-05-2018-0088>
- Taris, T. W., & Hu, Q. (2020). Going your own way: A cross-cultural validation of the motivational demands at work scale (Mind@Work). *Frontiers in Psychology*, 11(6), 1–13. <https://doi.org/10.3389/fpsyg.2020.01223>
- Taylor, S., Landry, C. A., Rachor, G. S., Paluszczek, M. M., & Asmundson, G. J. G. (2020). Fear and avoidance of healthcare workers: An important, under-recognized form of stigmatization during the COVID-19 pandemic. *Journal of Anxiety Disorders*, 75, 102289. <https://doi.org/10.1016/j.janxdis.2020.102289>
- Theurer, C. P., Tumasjan, A., & Welpe, I. M. (2018). Contextual work design and employee innovative work behavior: When does autonomy matter? *PLoS ONE*, 13(10), e0204089. <https://doi.org/10.1371/journal.pone.0204089>
- Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. *Procedia Economics and Finance*, 20, 679–686. [https://doi.org/10.1016/s2212-5671\(15\)00123-9](https://doi.org/10.1016/s2212-5671(15)00123-9)
- Van Dorsen-Boog, P., de Jong, J., Veld, M., & Van Vuuren, T. (2020). Self-Leadership among healthcare workers: A mediator for the effects of job autonomy on work engagement and health. *Frontiers in Psychology*, 11(7), 1–13. <https://doi.org/10.3389/fpsyg.2020.01420>
- Van Zyl, L. E., van Oort, A., Rispens, S., & Olckers, C. (2019). Work engagement and task performance within a global Dutch ICT-consulting firm: The mediating role of innovative work behaviors. *Current Psychology*, 40(8), 4012–4023. <https://doi.org/10.1007/s12144-019-00339-1>
- Wan, Q., Zhou, W., Li, Z., & Shang, S. (2018). Associations of organizational justice and job characteristics with work engagement among nurses in hospitals in China. *Research in Nursing and Health*, 41(6), 555–562. <https://doi.org/10.1002/nur.21908>
- Webster, J. R., Beehr, T. A., & Love, K. (2011). Extending the challenge-hindrances model of occupational stress: The role of appraisal. *Journal of Vocational Behavior*, 79(2), 505–516. <https://doi.org/10.1016/j.jvb.2011.02.001>
- Werleman, A. A. (2016). The Effect of Enriched Job Design on Innovative Work Behaviour. <http://arno.uvt.nl/show.cgi?fid=142234>
- WHO (2021). Health workforce : Global strategic directions for nursing and midwifery. 73(4), 4–9. <https://apps.who.int/iris/bitstream/handle/10665/344562/9789240033863-eng.pdf>
- Wibowo, T. S., & Mochklas, M. (2020). Urgency of organizational citizenship behavior towards performance of nurses of type-C hospitals in Surabaya. *International Journal of Scientific and Technology Research*, 9(2), 4534–4538. http://repository.um-surabaya.ac.id/5340/1/JURNAL_-_Urgency.pdf
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, 74(3), 235–244. <https://doi.org/10.1016/j.jvb.2008.11.003>
- Xerri, M. J., & Reid, S. R. M. (2018). Human resources and innovative behaviour: Improving nursing performance. *International Journal of Innovation Management*, 22(2), 1850019. <https://doi.org/10.1142/S1363919618500196>
- Yan, M., Peng, K. Z., & Francesco, A. M. (2011). The differential effects of job design on knowledge workers and manual workers: A quasi-experimental field study in China. *Human Resource Management*, 50(3), 407–424. <https://doi.org/10.1002/hrm.20428>
- Yasir, M., & Majid, A. (2019). Boundary integration and innovative work behavior among nursing staff. *European Journal of Innovation Management*, 22(1), 2–22. <https://doi.org/10.1108/EJIM-02-2018-0035>
- Zaniboni, S., Truxillo, D. M., & Fraccaroli, F. (2013). Differential effects of task variety and skill variety on burnout and turnover intentions for older and younger workers. *European Journal of Work and Organizational Psychology*, 22(3), 306–317. <https://doi.org/10.1080/1359432X.2013.782288>
- Zhang, H., Zhao, Y., Zou, P., Liu, Y., Lin, S., Ye, Z., Tang, L., Shao, J., & Chen, D. (2020). The relationship between autonomy, optimism, work engagement and organisational citizenship behaviour among nurses fighting COVID-19 in Wuhan: A serial multiple mediation. *BMJ Open*, 10(9), 1–7. <https://doi.org/10.1136/bmjopen-2020-039711>
- Zheng, R., Zhou, Y., Fu, Y., Xiang, Q., Cheng, F., Chen, H., Xu, H., fu, L., Wu, X., Feng, M., Ye, L., Tian, Y., Deng, R., Liu, S., Jiang, Y., Yu, C., & Li, J. (2021). Prevalence and associated factors of depression and anxiety among nurses during the outbreak of COVID-19 in China: A cross-sectional study. *International Journal of Nursing Studies*, 114, 103809. <https://doi.org/10.1016/j.ijnurstu.2020.103809>
- Zhou, E. (2020). The “too-much-of-a-good-thing” effect of job autonomy and its explanation mechanism. *Psychology (Savannah, Ga)*, 11(2), 299–313. <https://doi.org/10.4236/psych.2020.112019>