

PRIMARY RESEARCH

## Equivocality between Job Stressors and Medical Practitioners' Work Engagement: The Moderating Role of Islamic Work Ethics

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### Keywords

Workload  
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### Abstract.

**Purpose:** This study aimed to determine the impact of job stressors like workload, work-life conflict, and safety hazards on work engagement while testing Islamic work ethics as a moderator on the relationship.

**Methodology:** A time-lagged questionnaire survey method was employed to collect data. In total 319 responses were collected from medical practitioners working in different organizations under the Health Department Punjab of Pakistan.

**Finding:** The results reveal that job stressors, including workload, work-life conflict, and safety hazards reduce work engagement whereas, Islamic work ethics moderates the negative effects of workload and work-life conflict in such a way that the negative relationship between workload and work-life conflict with work engagement is mitigated when the Islamic work ethic is high. However, support is not found for the moderating effect of Islamic work ethics on safety hazards to work engagement relationship.

**Significance:** This research contributes to the extant literature on work engagement of healthcare by unpacking the ways in which issues pertaining to excessive workload, work-life conflict, and safety hazards hamper work engagement.

**Limitations:** The survey researches are susceptible to social desirability bias. The authors took utmost measures in this regard. However, results may be generalized cautiously. Secondly, results are based on time-lagged analysis.

**Practical and Social Implications:** Managers and administrators may strive to offer optimal workload, provide necessary safety measures and create a work-to-family balance for consistent work engagement of medical practitioners.

**KAUJIE Classification:** N2, P0, P2

**JEL Classification:** M12, M19, I12, J28

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## INTRODUCTION

Work engagement has acquired the attention of many scholars and practitioners from the last few years because of its strong relationship with individual and organizational outcomes (Karatepe et al., 2020; Knighta et al., 2019). Prior research has revealed the work engagement's direct relationship with key organizational outcomes, including performance (Gutermann et al., 2017), well-being (Robledo et al., 2019), creativity (Bakker & Xanthopoulou, 2013), emotional intelligence, job satisfaction (Toyama & Mauno, 2017; Wolfe & Kim, 2013), motivation (Green Jr et al., 2017), proactive behavior (James, 2019), organization citizenship behavior, and task performance (Bakker & Demerouti, 2014). Vigor, dedication, and absorption are the core dimensions demonstrating work engagement (Schaufeli et al., 2006). Work engagement is a constructive, fulfilling, and enthusiastic state of mind that results in positive work and behavioral attitudes (Makikangas et al., 2016) and reduce deviant workplace behavior (Lebron et al., 2018).

Job stress is a broader concept that has diverse effects on organizational health, both physiological and psychological, which may be more fleeting in nature (Ng et al., 2019) or yield long-term organizational implications (Tenney et al., 2016). Contemporary studies have emphasized more proximal predictors of work engagement like job stress which is inversely related to work engagement (Olugbade & Karatepe, 2019; Sonnentag, 2018) and causes severe impairment to organizational well-being and contextual performance. Though, the relationship between different types of stressors and work engagement has been investigated in different settings. However, empirical studies required a parsimonious model and the consistency about the direction and strength of the stress-engagement relationship. Work engagement of the health care providers has paramount importance because it is directly related to health care delivery and patient satisfaction. Highly enthusiastic medical doctors pay more attention and devotion to patients (Christian et al., 2011).

The extant literature shows that the workload is a predictor of burnout and negatively related to work engagement (Mache et al., 2014; Ten Brummelhuis & Bakker, 2012; Verweij et al., 2017). Furthermore, studies on Work-life conflict (WLC) have inconsistent findings on work engagement (Cortese et al., 2010; Karatepe & Karadas, 2016). Safety hazards (SH) have become a major threat in the healthcare profession and a source of stress which adversely influences work engagement (Loeppke et al., 2017). Rendering from Job Demand-Resource theory (Bakker & Demerouti, 2007), the balance between job demands and job resources is critical to survive and thrive. High work demands cause a compromise over the resources like job stress (workload) that obstruct task performance, causing low work engagement and motivation. Health care is viewed as a stressful profession. Despite the critical nature of the health care profession, there is a shortage of literature investigating the buffering role of variables towards medical staff job stressors and work engagement relationships. This study may be considered as a contribution in this regard. The varying and inconsistent relationship calls for future studies to know the boundary conditions that cause the variations between stress-engagement relationship as suggested by Dasgupta (2016); Klein et al. (2020). In Islam, work is perceived as an obligation, and Islamic work ethics (IWE) contribute constructively to flourish harmony and collective interests. Islamic work

ethics (IWE) is a part of Muslims' beliefs. Extant research shows the pervasive role of Islamic work ethics like justice, fairness, veracity, and teamwork, on commitment and extra-role behaviors (Alhyasat, 2012; Murtaza et al., 2016). Yousef (2001) stated that IWE emphasizes intention more than results and stresses social aspects in the workplace and duties towards society. Various studies have shown IWE's moderating role between different challenging situations and organizational outcomes like job involvement, organizational commitment, and job satisfaction (Khan & Rasheed, 2015; Khan et al., 2015). Nevertheless, still there is a shortage of evidence that incorporates IWE as a buffering factor on the relationship between stressors and job attitude. Conferring to the call of Khan et al. (2015), there is a need to explore situational and contingency factors between job stressors and job-related outcomes because people following IWE can protect themselves from organizational stressors (Tufail et al., 2017). In crux, following the axiom of Job Demand Resource theory and Herzberg two-factor motivational theory, the study revalidated the relationship between workload, work-life conflict, and safety hazards to work engagement and tested the moderating role of IWE which has been studied scarcely in extant literature.

## LITERATURE REVIEW

### Work Engagement

Work engagement was introduced by Kahn (1990). Work engagement has been defined as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2010; Schaufeli et al., 2002). The dimension vigor describes the perception of the worker about his work as stimulating, energetic, and something to which the worker wants to spend his time and efforts. Dedication explicates the worker's perception of his work as meaningful, whereas absorption refers to the perception of a worker finding his work fascinating and something in which he is fully immersed (Bakker et al., 2008). In the literature, it has been reported that engaged employees have control over the events that impact their lives. The engaged employees are energetic and self-efficacious for their professional life (Bakker et al., 2008; Schaufeli et al., 2001). Because the engaged employees remain positive in their attitude, therefore they perceive their positive feedback as a success of appreciation and recognition. The long hard working day makes them feel tired, but they gain pleasure from it because of interest and passion (Gorgievski et al., 2010).

### Workload

The workload in organizational life is viewed from two broad perspectives: work overload and work underload. Work overload has been defined as employees' own perception of having more work than they could manage even if given a longer time to do it (Shirom et al., 2006). The scholars reported that a high level of workload with time strain and difficulty of work might stimulate stress (Mazloun et al., 2008). Work overload and work underload, both types of workload can turn into work stress (Caplan, 1975). The workload may act as a negative work stressor or positive work stressor. Few researchers like Boswell et al. (2004) reported the workload as a positive work stressor which is in line with Douglas McGregor's Theory X that asserted the workload as a positive work stressor (Weissman, 2001). In some

cases where employees have little control over their job would not react positively to the workload, causing frustration. The workload has the capacity to turn into a stressor which can result in unwanted job outcomes. The workload is perceived as a hindrance stressor in the nursing profession and is a major predictor of burnout (Gabel-Shemueli & Dolan, 2014).

### **Work-life Conflict**

Work-life conflict refers to "competing role pressures brought on by activities that are related versus unrelated to work, such that fulfilling one's work responsibilities makes it difficult to attend to activities outside the work domain, and vice versa" (Greenhaus & Beutell, 1985). According to role theory, work-life conflict (WLC) is a situation in which the individual work role responsibilities interfere with responsibilities of personal role at home (Kahn et al., 1964; Thomas & Ganster, 1995). Out of many other reasons, there are two very important reasons for the attention toward work-life conflict. At first, the work-life conflict is responsible for many organizational and personal behaviors and attitudes. For example, work-life conflict is positively related to burnout, stress, cardiac diseases, and addictions (Bedeian et al., 1988; Ernst Kossek & Ozeki, 1998; Syrek et al., 2013). In the organizational behavior field, work-life conflict results in absence from duty, intention to leave the organization, reduced performance, and lower organizational commitment (Ernst Kossek & Ozeki, 1998; Galinsky et al., 1998; Thompson et al., 1999). For example, individuals experiencing work-life conflict are expected to face more stress. High work-life conflict negatively influences job satisfaction and low focus on organizational responsibilities (Ernst Kossek & Ozeki, 1998; Galinsky et al., 1998). Employees who experience high work-life conflict have to face problems at the organizational level due to reduced job performance and low focus on the job. These problems may be in the form of negative feedback, reduced recognition, and lower evaluation of the job. As a result, it is plausible to say that a high level of work-life conflict results in unfavorable work situations.

### **Safety Hazards**

According to the Canadian council of safety and health (CCOSH) "safety hazard refers to any source of potential damage, harm or adverse health effects on something or someone". Recently the idea of the safety of health care providers, doctors, nurses, and paramedical staff has acquired attention across the world. Workers of health care related industries who are under a lot of job-related stress put themselves at risk, which results in the form of emotional exhaustion, anxiety, and musculoskeletal pains (Felton, 1998). The healthcare profession is more susceptible to different risk factors because of safety-related threats and incidences. Compared to the other industries or sectors, the injury and illness rate in the healthcare profession is quite high (OHSA, 2013). The health care workers are exposed to epidemic diseases which results in a high death rate compared to other high fatality rate sectors (Shanafelt et al., 2015). In addition, physicians experience depression, which is almost 39% in their occupation (Shanafelt et al., 2015). All these motivated to examine the work-related stressors for health care employees and doctors (Rogers et al., 2004).

### **Herzberg Two- Factor Theory**

Herzberg et al. (1959) in two-factor theory, claimed two distinct sets of environmental, psychological, or social factors that initiate employees' satisfaction and motivation, i.e. hygiene and motivation factors. Hygiene factors (dissatisfiers) must be removed from the work environment to eliminate dissatisfaction. On the contrary, improving motivation factors (satisfiers) are postulated to increase employee satisfaction and make employees feel good about their work. Hygiene factors are extrinsic like working conditions, policies and, interpersonal relations, whereas motivators are intrinsic factors like self-accomplishment, recognition and work itself, which presumably stimulates satisfaction (Herzberg, 1966). Our study examined the role of key impediments towards job engagement like workload, work-life conflict, and safety hazards that may be considered as hygiene factors considering their vulnerability. Dissatisfiers constitute the base level factors that inhibit smooth working. Hence workload, work-life conflict, and safety hazards add to current literature as key predictors for doctors in the shape of dissatisfiers.

### **Job Demand-Resource (JD-R) Theory**

JD-R theory posits that every job has its risk factors known as demands and related helping mechanisms known as resources (Bakker & Demerouti, 2007; Demerouti et al., 2001). Job demands and job resources are the instrumental factors for performance and productivity in organizational life. Job demands are defined as physical, psychological, social, or emotional requirements of the job that need constant rational efforts associated with certain functional and psychological costs. Job resource covers those cognitive, physical, psychological aspects of the job to reduce job demands and stimulate work engagement, personal growth, and organizational development. Job demand turns into hindrance stressors when it results in task impairment, hampers goal achievement, and deteriorates employee's development or engagement (Bakker & Demerouti, 2014). On the other hand, job resources show an external and internal motivational protagonist by fostering employee's development, engagement, and learning process. In other words, if employees are provided with sufficient job resources to manage and meet the hindrance demands, it helps to achieve a satisfying working state (Bakker et al., 2005). This study considered the same proposition of JD-R theory that workload, work-life conflict, and safety hazards are the psychological demands that lead to distress and frustration, hence curtailing work engagement. Islamic work ethics, being a strong psychological reservoir within the belief system of individuals, stimulate both social and moral behavior, restrain employees from unethical and deviant work, encourage them to act productively, and yield dedication, satisfaction, and equity (Rawwas et al., 2018).

### **Workload to Work Engagement**

Researchers have reported that workload has a significant effect on the health and performance of employees (Miller et al., 1999). However, the extant literature lack the consistency to confirm whether or not workload has a positive or negative impact on a job outcome. Especially when the job-related demands and job-related resources are imbalanced, it results into deficiency of employee resources to cope with the workload, which influences the employee

performance negatively or positively depending on the individual's personality (Gilboa et al., 2008). However, rapid fall down or rise in workload influences the performance of an employee and may become the cause of low performance (Cox-Fuenzalida et al., 2004).

The interesting aspect of the workload may emerge in the form of an exceptional performance when employees perceive workload as a challenge and passionately accept added responsibilities (Gilboa et al., 2008). Job performance may suffer due to difficult job conditions and organizational environment, acting as a dissatisfying or stimulating role (Herzberg, 1966). The exceeding workload, as evident in the extant literature, can hinder the work engagement (Mache et al., 2014; Ten Brummelhuis & Bakker, 2012; Verweij et al., 2017). In this study, the workload in the Pakistani context appeared as a significant stressor compared to others (Kazmi et al., 2008). Therefore we hypothesize that;

Hypothesis 1: There is a negative relationship between workload and work engagement.

### **Work-Life Conflict to Work Engagement**

Very few studies have explored the influence of home conditions on the workplace-related attitude and behaviors for health-related staff (Bakker et al., 2011; Byron, 2005; Demerouti et al., 2010; Wharton & Erickson, 1993). A study by Bakker et al. (2005) considering Dutch dual-earner couples, reported that there is a relationship between the home resources and work-related demands like work engagement. The work-life conflict is a state of conflict in which worker role at work restrain worker to participate in home activities and vice versa. WLC becomes severe when job-related demands are high while support from one role can positively affect another role (Greenhaus & Beutell, 1985; Grzywacz & Marks, 2000). Foregoing in view, we may hypothesize that;

Hypothesis 2: There is a negative relationship between work-life conflict and work engagement.

### **Safety Hazards to Work Engagement**

In the context of workplace safety, work engagement helps to follow safety guidelines, coordination among team members and goal achievement (Neal & Griffin, 2006; Parker et al., 2001). However, high safety risk at workplace negatively affects employee well-being that results into employees' anxiety, work-related stress, and burnout (Hofmann & Morgeson, 1999; Neal & Griffin, 2006; Parker et al., 2001). Generally, employees perceiving a safe working environment take it as a job resource and feel satisfied with job and life. However, when employees perceive safety hazards in the workplace, they perceive it as a threat that results in job-related stress. The transactional theory of stress explains that employees perceive their job demands in relation with situational factors and rate it as positive or negative depending upon harm associated with them (Lazarus & Folkman, 1984). During corona pandemics, Media has reported many deaths of doctors, nurses, and paramedics. In press briefings, doctors in Pakistan explain their concerns and put forward their demands to the government. These events clearly show their stress. Therefore, it is plausible to assume;

Hypothesis 3: There is a negative relationship between safety hazards and work engagement.

## Islamic Work Ethics

With the increase in the importance attached to ethics and morality in daily life and with the exploration of ethical aspects of business practices, work ethics has become a thematic area for organizations and the general public (Crane & Matten, 2007; Sen, 1993). By tracing history, it becomes evident that the initial contribution in this regard was made by Weber's with the theory of protestant work ethics (PWE). The seminal work gave rise to ethical motivation, and ethics turned out to be an important constructs for research in the west (Yousef, 2000). In the light of teachings of The Holy Qur'ān and *sunnah* of The Holy Prophet Muhammad (PBUH), Ali (1988) introduced the construct of Islamic work ethics (Ali & Al-Owaihan, 2008; Rice, 1999; Yousef, 2000). Religious thoughts of Muslims act as a code of life for them and might be apparent in their laws of social life and work ethics (Syed & Ali, 2010). Moreover, Islamic work ethics are derived from the Islamic laws which are established and accepted universally by Muslims. Therefore Islamic laws not only affect the individual society but the whole sphere of life throughout the world (Sachedina, 2001). Islamic work ethics have their roots in the belief system of Muslims. In Islam, productive activities in society and organization are part of religion.

## Moderating Role of IWE

From the above discussion, it is clear that IWE has roots in the belief system of Muslims. Therefore, it is assumed that workers with a high value of IWE are more resistant against the work stress particularly in situations attributed with high workload, high work-life conflict, and high threat of safety hazards. As Khan et al. (2015) explored the moderating role of IWE between the relationship of perceived organizational justice and work outcomes. He recommended further examining the moderating role of IWE. When an employee perceives job stress in the shape of a high workload, work-life conflict and safety hazards, tend to reduce job engagement. However, individuals with high IWE are assumed to be resistant enough to negate the work stress. According to IWE, it is a moral and religious obligation of Muslim workers to achieve organizational goals in stressful situations e.g. The Qur'ān says "But he who does righteous deeds and he is a believer, he will neither have fair of injustice, not deprivation" (The Qur'ān myislam 20:112). Therefore, we assume that employees who are high on IWE, will not show anxiety when organizational stress is at its peak. According to Bouma et al. (2003), job stress and its relationship to job outcome are understood. Religion is a belief system of individuals that significantly affects intrinsic and extrinsic motivation. Employees who are high on IWE would show a higher level of work engagement and will be resistant to work stressors.

Islamic work ethics constitute the primary belief system to guide Muslims in every sphere of life, and it confers religious obligations on Muslims (Beekun & Badawi, 2005). Therefore, it is assumed that the doctors who are high on IWE may perform better despite the high workload. It will buffer the negative influence of workload and will lead to the attainment of high work engagement. All these arguments help to develop the following hypothesis; Hypothesis 4: The negative relationship between medical doctor's workload and work en-

agement is moderated by Islamic work ethics in such a way that the relationship will be weaker for doctors high on Islamic work ethics.

A thorough engagement with work duties is an obligation rather a choice for Muslims (Parboteeah et al., 2009). Islamic principles guide employees belonging to any profession to contribute up to maximum at the work floor. Resultantly, they strive to cope with the stress emerging from WLC and work honestly and dedicatedly. Hence, we may assume;

Hypothesis 5: The negative relationship between medical doctors' work-life conflict and work engagement is moderated by Islamic work ethics in such a way that the relationship will be weaker for doctors high on Islamic work ethics.

Health is a great blessing from God for Muslims, and when they get ill, it is God who restores their health. According to a few studies, Muslims follow their religion (Islam) relatively more enthusiastically than other religious groups (Lewis et al., 2003; Yip, 2004). Therefore, despite a high level of stress due to safety hazards, doctors high on IWE would be able to show high work engagement despite high vulnerabilities in the environment. Hence, we may hypothesize;

Hypothesis 6: The negative relationship between medical doctors' safety hazards and work engagement is moderated by their Islamic work ethics in such a way that the relationship will be weaker for doctors high on Islamic work ethics.

## **METHODS**

### **Sample and Data Collection Procedure**

Data was collected from Medical Officers (MOs), senior medical officers (SMOs), women medical officers (WMOs), and consultant doctors from different hospitals working under Health Department Punjab Pakistan. The concerned authority approved all the hospitals of each selected district. The doctors belonging to different specialities were targeted to obtain maximum variation in responses. The study was primarily based on a questionnaire survey. The author did not observe any visible happening or events during data collection.

The data was collected at two points of time with 2 months' lag. During first interval (T1), 450 questionnaires were distributed, along with return envelopes, through postal and courier services to measure workload, work-life conflict, safety hazards and Islamic work ethics. In total 362 responses were received and 348 were screened as valid. Later after three months at a second interval (T2) 348 questionnaires were distributed to respondents who shared valid responses to measure the work engagement of doctors. At the end of the second interval, 319 usable questionnaires were received, which were taken into analysis using SPSS 20.0 and AMOS 23.

Keeping in view the nature of study variables, the self-reported measures could have been affected by social desirability response (SDT) and common method variance (CMV) that can be a major threat to the generalizability of the study. We followed standard methodological procedures (Cooper et al., 2020) and standard statistical to lessen the effects (Williams & McGonagle, 2016). The research instrument was enclosed with a cover letter explaining the purpose of the study, academic nature, and measures to uphold the anonymity of responses. A detailed profile of the principal investigator (PI) was attached with address and contact



number. The respondents could call to discuss any concern. The cover letter also detailed the list of research team members active in different roles. Participation in the survey was at the will of the respondents and they could withdraw at any time in case of any discomfort.

## **Measures**

All the measures were taken from the well tested sources. It ensured the face and content validity. We used 7 points Likert scale to tap responses for workload, work-life conflict, and safety hazards, and Islamic work ethic anchoring "1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neither agree nor disagree, 5= somewhat agree, 6= agree and 7= strongly agree". However, the work engagement was measured by a 7-point Likert Scale and anchored as "0= never, 1=almost never, 2= rarely, 3= sometimes, 4= often, 5= very often, and 6= always". Measure details are as follows;

### ***Workload***

To measure workload a 5-items scale from the study of Peterson et al. (1995) was employed. Example includes "There is a need to reduce some part of my job". The reported reliability is  $\alpha = 0.87$ .

### ***Work-Life Conflict***

A 9-items scale was adopted to estimate work-life conflict developed by Carlson et al. (2000). The scale examines three facets of WLC such as time-based, strain-based, and behavior-based. Every aspect was measured by 3-items. Sample items included "My work keeps me from my family activities more than I would like" represented time-based conflict. The sample item "When I get home from work, I am often too frazzled to participate in family activities/responsibilities" represented strain-based conflict. A sample item "The problem-solving behaviors I use in my job are not effective in resolving problems at home" represented behavior-based conflict. Matthews et al. (2010) previously reported reliability measure as  $\alpha = 0.87$ .

### ***Safety Hazards***

This study assessed safety hazards using 10-items measurement scale developed and validated by (Hayes et al., 1998). The sample item was "Could get hurt easily". The value of Cronbach Alpha was  $\alpha = 0.94$ .

### ***Islamic Work Ethics***

To measure Islamic work ethics, a 17-items measurement scale developed by Ali (1988) was used. Example of item include "Dedication to work is a virtue". Khan et al. (2015) stated reliability was  $\alpha = 0.81$ .

### ***Work Engagement***

To measure work engagement of medical doctors, a shorter version of the Utrecht WE 9-items measurement scale developed by Schaufeli et al. (2006) was adopted. The scale is segregated into three dimensions of work engagement according to its definition i.e., vigor, dedication, and absorption. Sample items included "At my work, I feel bursting with energy". Olugbade and Karatepe (2019) reported reliability as  $\alpha = 0.87$

## RESULTS

Common method variance (CMV) was examined using Harman's single factor test. This single factor accounted for 29.8% of the variance, which was less than 50% that confirms that data and responses were free from CMV (Harman, 1976).

**TABLE 1**  
**Descriptive Statistics and Correlations**

| Constructs            | Mean | S.D  | AVE   | MSV   | 1       | 2       | 3       | 4      | 5     |
|-----------------------|------|------|-------|-------|---------|---------|---------|--------|-------|
| 1 Workload            | 4.22 | 1.67 | 0.763 | 0.149 | -0.945  |         |         |        |       |
| 2 Work Life Conflict  | 4.39 | 1.37 | 0.644 | 0.22  | .331**  | -0.942  |         |        |       |
| 3 Safety Hazards      | 4.29 | 1.21 | 0.664 | 0.217 | .326**  | .439**  | -0.949  |        |       |
| 4 Islamic Work Ethics | 5.26 | 1.17 | 0.902 | 0.066 | -.092** | .041**  | -.161** | -0.946 |       |
| 5 Work Engagement     | 4.19 | 0.89 | 0.835 | 0.22  | -.387** | -.402** | -.384** | .327** | -0.94 |

*N*=319; \*\**p*<0.05; AVE= Average Variance Extracted; Reliabilities in parenthesis

Constructs' reliabilities were projected by Cronbach  $\alpha$ , i.e. the degree to which measurement items have internal consistencies (Cooper & Schindler, 2013, p. 260). The reliability of all scale items was found to be above the minimum threshold of .70 (Nunnally, 1994). Construct validity deals with the precision of measurement scales (Fornell & Larcker, 1981). AVE, if greater than 0.50 (latent variables account for 50% of variance), confirms convergent validity and MSV, if less than the AVE, ensures the discriminant validity (Carver & Glass, 1976). Discriminant validity is also accounted by examining the square root of the average variance extracted (AVE), which should be greater than the correlation of latent constructs (Sarstedt et al., 2017). Table 1 presents values of descriptive statistics reliability and validity measures.

The measurement model was established that allows testing a fit between observed data and theoretically based model, i.e. causal relation between latent variables (Gerbing & Hamilton, 1996). The proposed model was analyzed using CFA for the uniqueness of the measurement model through factor structure, as shown in figure 1. The overall model fitness was observed as indicated through model fit indices (Hu & Bentler, 1999). CMIN/DF is calculated as 1.815 which is below the cutoff of 3 (table 2), which shows that the theoretical model fits the sample data. CFI is 0.962, greater than the cut-off value of .90. RMSEA value is .035 under the threshold value of .05, and SRMR value for sample data is .051. In addition, the correlation between all three predictors such as workload, work-life conflict, and safety hazards to work engagement was negative and significant (Table 2).

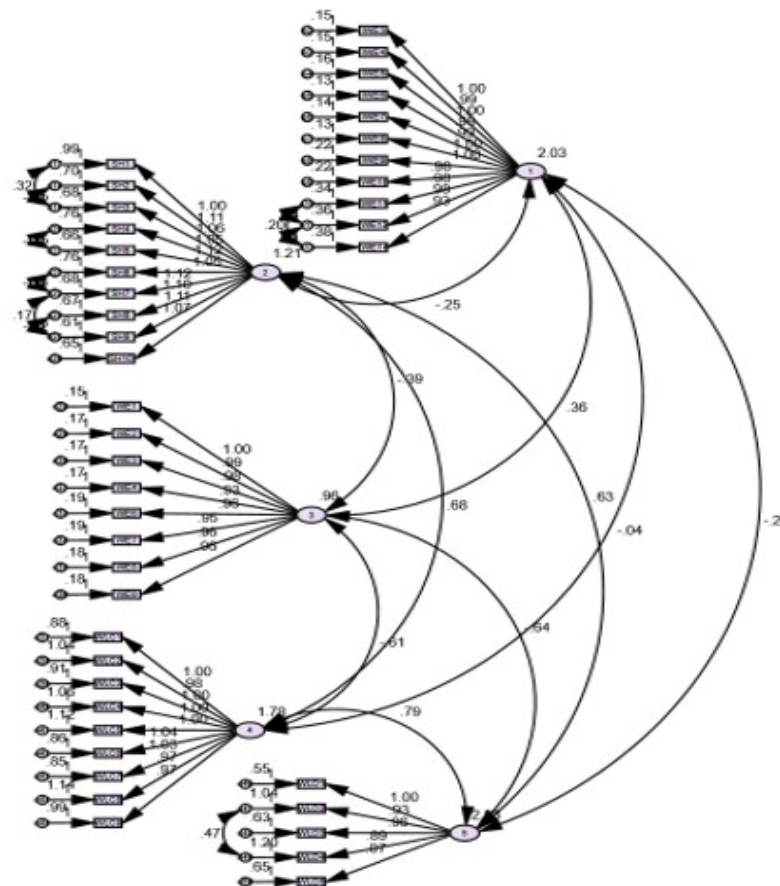
### Control Variables

Deliberating from Spector (2011)'s study, blind insertion of control variables make statistical results inconsistent and biased. The research conducted one-way ANOVA to compare work engagement across, the highest level of education, age, and gender. It was revealed that there were significant differences in work engagement. With age ( $F = 3.45$ ,  $p < .005$ ), gender, ( $F = 3.93$ ,  $p > 0.048$ ) and highest level of education ( $F = 3.94$ ,  $p < .004$ ). Therefore, the

proposed model controlled three demographic variables: age, gender, and the highest level of education.

**TABLE 2**  
**Goodness-of-Fit Statistics for the Measurement Model**

|                   | Guidelines  | Achieved |
|-------------------|-------------|----------|
| Chi-Square (CMIN) | Significant | 1524.214 |
| DF                | NA          | 840      |
| CMIN/DF           | <3          | 1.815    |
| CFI               | <0.95       | 0.962    |
| GFI/AGFI          | >0.90       | 820/.798 |
| RMSEA             | <0.05       | 0.035    |
| SRMR              | <0.06       | 0.051    |
| NFI               | >0.90       | 0.919    |



**FIGURE 1.** Confirmatory Factor Analysis

### The Testing Main Effect of Hypotheses

Multiple linear regression analysis was employed to test all main effects of hypotheses (H1.

H2, & H3). We entered control variables age, gender, and the highest level of education in Step-1 followed by independent variables workload, work-life conflict, safety hazards, and moderator Islamic work ethics. Table 3 presents results for the main effects of WLD, WLC, SH, and IWE on work engagement.

**TABLE 3**  
**Results for Main Effect Regression Analysis**

|                            | $\beta$  | $\Delta R^2$ |
|----------------------------|----------|--------------|
| Step-1                     |          |              |
| Age                        | .069*    |              |
| Gender                     | -0.099   |              |
| Highest Level of Education | .094*    | .050**       |
| Step-2                     |          |              |
| Age                        | .065*    |              |
| Gender                     | -0.111   |              |
| Highest level of education | 0.06     |              |
| WLD                        | -.122*** |              |
| WLC                        | -.161*** |              |
| SH                         | -.106**  |              |
| IWE                        | .231***  | .333***      |

$N=319$ ; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

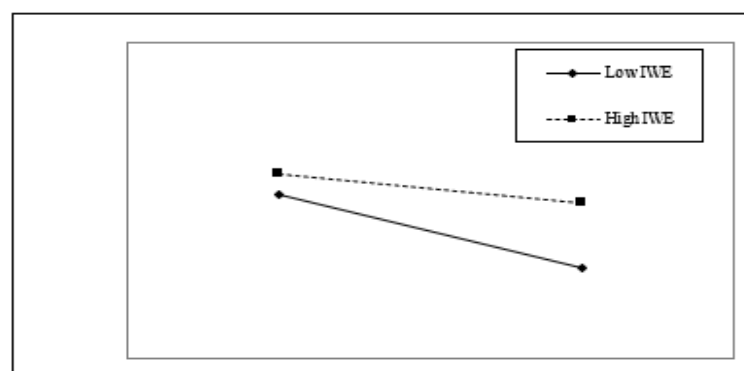
WLD= workload; WLC= work life conflict; SH= safety hazards;

IWE= Islamic work ethics

**TABLE 4**  
**Interactional Effect**

|           | $\beta$ | SE     | $t$     | $p$    | LLCI    | ULCI    |
|-----------|---------|--------|---------|--------|---------|---------|
| Constant  | 5.383   | 0.5123 | 10.5077 | 0      | 4.375   | 6.3909  |
| IWE       | -0.0614 | 0.0912 | -0.6728 | 0.5016 | -0.2408 | 0.1181  |
| WLD       | -0.5639 | 0.1117 | -5.048  | 0      | -0.7838 | -0.3441 |
| WLD x IWE | 0.0686  | 0.0201 | 3.415   | 0.0007 | 0.0291  | 0.1082  |

Outcome variable= Work Engagement



**FIGURE 2.** Moderation Effect WLD x IWE

The results show that WLD was negatively related to work engagement ( $\beta = -.122, P < .001$ ). The relationship between WLC and work engagement was negative ( $\beta = -.161, P < .001$ ). Lastly, SH was also negatively related to work engagement ( $\beta = -.106, P < .01$ ).

Moderating effect of IWE on the relationship between WLD and WE. Moderation analysis examines the size or sign of the effect of predictor variable X on variable Y with interacting effects of moderator variable(s) (Hayes, 2012). To examine the moderating effect of IWE on the relationship between workload and work engagement, this study used Process Macro Hayes Model-1 (Hayes, 2017, p. 8). As shown in Table 4, the moderation of IWE is supported ( $\beta$  for  $WLD \times IWE = 0.0686, p < .001$ ) between workload and work engagement. The results further revealed a significant change in  $R^2$  due to IWE as moderator ( $R^2 = 0.11, p < 0.001$ ). Therefore, we concluded that IWE moderates between workload and work engagement and this substantiates hypotheses 4.

In figure 2, a simple slope was drawn to further confirm the moderating effect of IWE. Slope test revealed that the relationship is inverse between WLD and WE for employees with low Islamic work ethics.

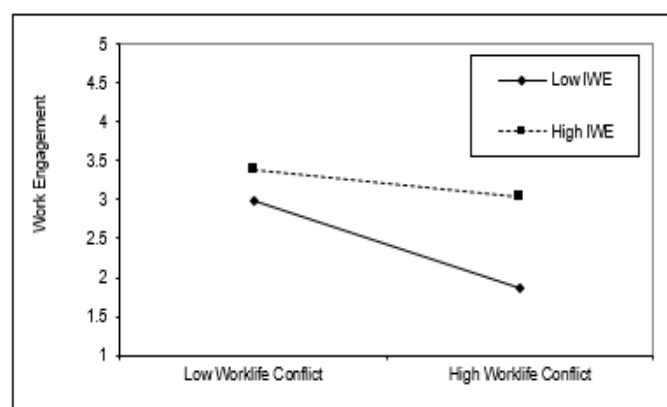
### Moderating Effect of IWE on the Relationship between WLC and WE

Moderated regression was also employed with a mean-centred product of work-life conflict and Islamic work ethics to work engagement. As shown in Table 5, the interaction term is positive and significant ( $\beta$  for  $WLC \times IWE = .1151, p < .0001$ ). The results further revealed

**TABLE 5**  
**Interactional Effect**

|           | $\hat{\beta}$ | SE     | t       | p      | LLCI    | ULCI    |
|-----------|---------------|--------|---------|--------|---------|---------|
| Constant  | 6.4954        | 0.6486 | 10.0144 | 0      | 5.2192  | 7.7715  |
| IWE       | -0.1952       | 0.117  | -1.6679 | 0.0963 | -0.4254 | 0.0351  |
| WLC       | -0.898        | 0.1558 | -5.765  | 0      | -1.2045 | -0.5915 |
| IWE x WLC | 0.1151        | 0.0281 | 4.0973  | 0.0001 | 0.0598  | 0.1703  |

Outcome variable= Work Engagement



**FIGURE 3.** Moderation Effect WLC x IWE

a significant change in  $R^2$  due to IWE as moderator ( $R^2=0.0273$ ,  $p<0.001$ ). Therefore, hypotheses-5 is supported, assuming that IWE moderates between work-life conflict and work engagement.

In figure 3, a simple slope was drawn to confirm the moderating effect of IWE. The correlation between WLC and WE is negative for employees with low Islamic work ethics as compared to employees with high Islamic work ethics.

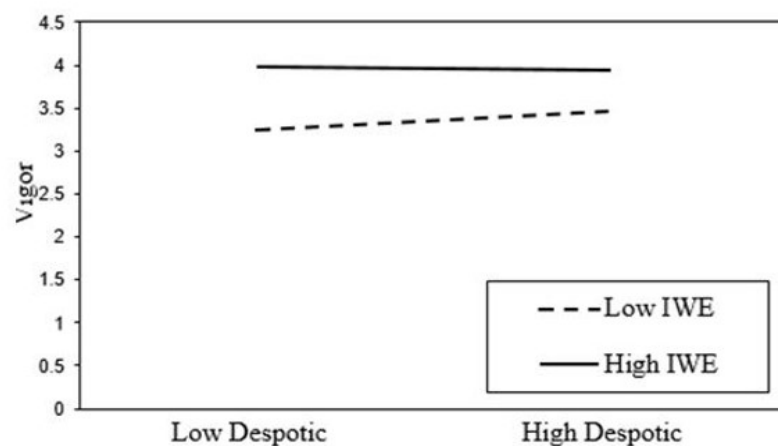
### Moderating Effect of IWE on the Relationship between SH and WE

Lastly, moderating effect of IWE on the relationship between safety hazards and work engagement was also examined. The interaction term was found insignificant ( $SH \times IWE=.0219$ ,  $P=.4505$ ) between work-life conflict and work engagement. The results further revealed an insignificant change in  $R^2$  due to IWE as moderator ( $R^2=.0014$ ,  $p<0.4505$ ). Therefore, we concluded that IWE does not moderate between safety hazards and work engagement. Therefore hypothesis 6 is not accepted. The same is also revealed through the slope test in figure 4.

**TABLE 6**  
**Interactional Effect**

|          | $\beta$ | se     | $t$     | $p$    | LLCI    | ULCI    |
|----------|---------|--------|---------|--------|---------|---------|
| Constant | 4.6921  | 0.7329 | 6.4021  | 0      | 3.2501  | 6.1341  |
| IWE      | 0.1127  | 0.1307 | 0.8618  | 0.3895 | -0.1446 | 0.3699  |
| Safety   | -0.3689 | 0.1599 | -2.3067 | 0.0217 | -0.6837 | -0.0542 |
| IWE x SH | 0.0219  | 0.029  | 0.7554  | 0.4505 | -0.0351 | 0.079   |

Outcome variable= Work Engagement



**FIGURE 4.** Moderation Effect SH x IWE

### Discussion

The work engagement of employees has been an area of interest from last few years. Although

many studies have been conducted to explore the worth of employees' work engagement regarding its impacts on performance and business competitiveness, yet we have very little empirical evidence regarding healthcare providers' thorough engagement with their work. Therefore, following the axiom of job demand and resource (JDR) model, we attempted to examine the impact of job stressors (workload, work-life conflict, safety hazards) on work engagement of physicians and surgeons (medical doctors) with moderating role of Islamic work ethics. There is a general agreement that job demands negatively influence the work engagement of employees. With the rapid change in the work environment, the increased focus of government on health facilities has also intensified the job demands in hospitals, especially for doctors. Due to a small number of government hospitals, population density and demanding nature of patients, the work-related demand of doctors has increased manifold. On the other hand, almost all doctors are involved in evening clinics and private hospitals; this may lead to work-life conflict for doctors and put them under superfluous stress. With these two stressors, workload (WLD) and work-life conflict (WLC), the safety hazard has also emerged as a challenge for doctors. In countries like Pakistan, where safety measures for healthcare providers are insufficient and have never been a priority area of the local governments. This put doctors under great pressure and anxiety. Workload (WLD), work-life conflict (WLC), safety hazards (SH) are quite evident job stressors that are faced by doctors and can have a negative impact on work engagement (WE). Among all religions of the world, Muslims are perceived to be more religious in their daily lives (Tezcur et al., 2006). Muslim believes that Islam guides them in all parts of life and brings ethics to the workplace. Pakistan is a Muslim country, and most of its medical doctors are Muslims. Islamic work ethics (IWE) has its roots in the belief system of Muslims and has the capacity to protect them from job stressors (Khan et al., 2015). Therefore we tested IWE as a moderator on the postulated relationships.

It was concluded that when physicians and surgeons perceive a high workload, it reduces their work engagement. The findings are in line with previous studies suggesting workload as job stress in healthcare profession (Weinberg & Creed, 2000) and negatively influences work engagement (Leiter & Maslach, 2003). It shows that when doctors are overburdened to provide medical consultancies to large number of patients in a short time, they find themselves under extra pressure. As a result, their work engagement regarding diagnosis and treatment decreases and leads to diagnostic and treatment errors as well.

Our findings also confirm that when physicians and surgeons experience work-life conflict, it results into a hindrance towards work engagement. These findings are also supported by previous studies that negative home interference have a negative impact on the work engagement of medical residents (Verweij et al., 2017). These results support the idea that the doctors who are facing work life conflict also suffer with diversion of attention, because the pay and packages in government sectors are not very encouraging; as a result, doctors have to work in private hospitals and clinics. Due to the extra work, doctors fail to allocate adequate time to their families. These consequences lead to work life conflict to doctors. Consequently, home related responsibilities create a stress on their mind and divert true engagement.

The results also support the notion which claim that when doctors perceive the hazardous

threat, it reduces their work engagement. These findings are supported by earlier studies which state that when employees face job demands like safety hazards, it reduces their job performance and stimulate employee's burnout (Bakker & Demerouti, 2007), which is a flipside of work engagement. It reveals that when doctors have to examine the patient with communicable diseases, the diseases which are felt a threat to the doctors to their own health cause a reluctance to provide service delivery. The concern about own health creates a hurdle for the development of true work engagement for doctors. These results clearly support the idea that WLD, WLC and SH are detriments for WE in the medical doctor.

In addition to the above derived results, we found good support for the moderating influence of Islamic work ethics (IWE). It weakens the relationship of workload and work engagement which shows that the doctors with strong Islamic work ethics and values feel less stressed despite the high workload and remains engaged in their work. It has also been found that IWE negatively affects the relationship of work life conflict and work engagement which states that a doctor remains engaged in his work even when experiencing work life conflict provided strong Islamic work ethics. Interestingly and contrary to our expectations, IWE did not influence the negative relationship of safety hazards and work engagement. The possible reason can be traced from the Holy Qur'ān. The Holy Qur'ān in *Surah Al-Baqarah* verse, 173 describes the guidelines to take measures for the safety of one's own life. "He has forbidden you carrion, and blood, and flesh of swine, and what was dedicated to other than God. But if anyone is compelled, without desiring or exceeding, he commits no sin. God is forgiving and merciful." It gives liberty and suspends Islamic obligations in life-threatening situations. Health care providers are required to adhere to all measures protecting their lives in a hazardous situation. In this respect, doctors prefer their own safety. Therefore IWE do not neutralize the negative relationship between safety hazards and work engagement.

## CONCLUSION

Our study sought to make a contribution to the literature of medical practitioners' work engagement by specifying under-researched aspects of work-related adversities such as work overload, health and safety issues, and work-family conflict. Medical practitioners are vulnerable to various challenges that undermine their consistent engagement with work. From the last few years, Islamic work ethics has emerged as a key moderator to protect against job stressors and enhance work engagement. The neutralizing effect of Islamic work ethics was also examined. Results showed an inverse relationship between workload, work-life conflict, and safety hazards to work engagement. Whereas Islamic work ethics moderated the relationship in a way that the negative relationships were weak between workload and work-life conflict to work engagement, for employees high on Islamic work ethics. Contrary to our expectations, the moderating effect of Islamic work ethics was insignificant for the relationship between safety hazards and work engagement. A possible reason can be the Islamic teachings that encourage Muslims to protect life and ensure safety first in different work-life situations.



### **Theoretical Implications**

Our study extends the research on work engagement in different ways. First, we studied the effects of workload, work-life conflict and safety hazards collectively on work engagement which was not taken in an integrated way in the previous studies. Secondly, this study confirmed the moderating role of IWE between workload, work-life conflict, and safety hazards to work engagement relationships. All the relationships in this study were examined by collecting data from the doctors of the health department of Pakistan. Doctors (physicians and surgeons) as a population of the study, also offered a unique area of investigation within the ambit of work engagement. Lastly, our study provided support to job demand and resource theory (JD-R theory). The resource depletion due to various job-related demands such as workload, work-life conflict, and safety hazards were offset in the presence of Islamic work ethics as a resource.

### **Managerial Implications**

This study also offers various managerial implications. Since workload, work-life conflict, and safety hazards have posed a serious challenge to the work engagement of doctors working in different capacities, therefore authorities should evaluate the hospitals with respect to doctor-patient ratio. Countermeasures should be taken to balance figures. Doctors should also be provided ample opportunities to create a balance between work and family life. If the government allows private practice in evening times for limited hours in government hospitals, it will discourage the doctors from private practices and would certainly help them to cope with work-life conflict. The most important finding emerges in the form of safety hazards which doctors feel most life-threatening aspect. Management should create safe working environment and processes by taking safety measures and by providing safety tools (gloves, masks, isolation areas, screening kits, etc). The management should also improve the training regarding doctors' safety. Lastly, our results conclude that the doctors high at IWE feel less stressed on job. Therefore training interventions to build IWE may be organized for the doctors who are already on the job. Short courses about IWE may also be included in the syllabus of doctors during their graduations studies.

### **Limitations and Future Directions**

This study has a few limitations that should be taken into account while generalizing the results. First, the data was collected from the cities located in south Punjab, which are counted as an underdeveloped region of Pakistan. Therefore, the possibilities to be in severe safety hazards conditions due to lack of facilities and work demands are high. Secondly, the concentrated nature of data from a particular region also limits the generalizability of results findings. Third, the survey data using a questionnaire is also susceptible to various kinds of biases.

To address these limitations, future researchers should try to explore the impact of IWE on other causal relationships where employees' job engagement is challenged. Other population groups such as military personnel, teachers and police officers that are vulnerable to job stress should also be examined with same variables. Moreover, the model may also be

tested in other cultural settings on health care staff to know the robustness of results. Lastly, longitudinal design may also be opted to see if the results are sensitive to time or not.

## REFERENCES

- Alhyasat, K. M. (2012). The role of Islamic work ethics in developing organizational citizenship behavior at the Jordanian Press Foundations. *Journal of Islamic Marketing*, 3(2), 139-154. doi: <https://doi.org/10.1108/17590831211232555>
- Ali, A. (1988). Scaling an Islamic work ethic. *The Journal of Social Psychology*, 128(5), 575-583. doi: <https://doi.org/10.1080/00224545.1988.9922911>
- Ali, A. J., & Al-Owaihan, A. (2008). Islamic work ethic: a critical review. *Cross Cultural Management: An International Journal*, 15(1), 5-19. doi: <https://doi.org/10.1108/13527600810848791>
- Bakker, A., & Demerouti, E. (2014). Job demands: resources theory. In *Wellbeing: A complete reference guide volume III work and wellbeing* (pp. 37-64). Wiley-Blackwell. doi: <https://doi.org/10.1002/9781118539415.wbwell019>
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: state of the art. *Journal of Managerial Psychology*, 22(3), 309-328. doi: <https://doi.org/10.1108/02683940710733115>
- Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations*, 58(5), 661-689. doi: <https://doi.org/10.1177/0018726705055967>
- Bakker, A. B., Lieke, L., Prins, J. T., & Van der Heijden, F. M. (2011). Applying the job demands-resources model to the work-home interface: a study among medical residents and their partners. *Journal of Vocational Behavior*, 79(1), 170-180. doi: <https://doi.org/10.1016/j.jvb.2010.12.004>
- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: an emerging concept in occupational health psychology. *Work & Stress*, 22(3), 187-200. doi: <https://doi.org/10.1080/02678370802393649>
- Bakker, A. B., & Xanthopoulou, D. (2013). Creativity and charisma among female leaders: the role of resources and work engagement. *The International Journal of Human Resource Management*, 24(14), 2760-2779. doi: <https://doi.org/10.1080/09585192.2012.751438>
- Bedeian, A. G., Burke, B. G., & Moffett, R. G. (1988). Outcomes of work-family conflict among married male and female professionals. *Journal of Management*, 14(3), 475-491. doi: <https://doi.org/10.1177/014920638801400310>
- Beekun, R. I., & Badawi, J. A. (2005). Balancing ethical responsibility among multiple organizational stakeholders: the Islamic perspective. *Journal of Business Ethics*, 60(2), 131-145. doi: <https://doi.org/10.1007/s10551-004-8204-5>
- Boswell, W. R., Olson-Buchanan, J. B., & LePine, M. A. (2004). Relations between stress and work outcomes: the role of felt challenge, job control, and psychological strain. *Journal of Vocational Behavior*, 64(1), 165-181. doi: [https://doi.org/10.1016/S0001-8791\(03\)00049-6](https://doi.org/10.1016/S0001-8791(03)00049-6)

- Bouma, G., Haidar, A., Nyland, C., & Smith, W. (2003). Work, religious diversity and Islam. *Asia Pacific Journal of Human Resources*, 41(1), 51-61.  
doi: <https://doi.org/10.1177/1038411103041001022>
- Byron, K. (2005). A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behavior*, 67(2), 169-198.  
doi: <https://doi.org/10.1016/j.jvb.2004.08.009>
- Caplan, R. D. (1975). *Job demands and worker health: main effects and occupational differences*. US Department of Health, Education, and Welfare, Public Health Service.  
doi: <https://doi.org/10.1037/e573842014-001>
- Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior*, 56(2), 249-276. doi: <https://doi.org/10.1006/jvbe.1999.1713>
- Carver, C. S., & Glass, D. C. (1976). The self-consciousness scale: a discriminant validity study. *Journal of Personality Assessment*, 40(2), 169-172.  
doi: [https://doi.org/10.1207/s15327752jpa4002\\_8](https://doi.org/10.1207/s15327752jpa4002_8)
- 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.  
doi: <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Cooper, B., Eva, N., Fazlelahi, F. Z., Newman, A., Lee, A., & Obschonka, M. (2020). Common method variance in vocational behavior research: reviewing the state of the literature. *Journal of Vocational Behavior*, 121, 103472.  
doi: <https://doi.org/10.1016/j.jvb.2020.103472>
- Cooper, D., & Schindler, P. (2013). *Business research methods*. The McGraw-Hill Irwin.
- Cortese, C. G., Colombo, L., & Ghislieri, C. (2010). Determinants of nurses' job satisfaction: the role of work-family conflict, job demand, emotional charge and social support. *Journal of Nursing Management*, 18(1), 35-43.  
doi: <https://doi.org/10.1111/j.1365-2834.2009.01064.x>
- Cox-Fuenzalida, L.-E., Swickert, R., & Hittner, J. B. (2004). Effects of neuroticism and workload history on performance. *Personality Individual Differences*, 36(2), 447-456.  
doi: [https://doi.org/10.1016/S0191-8869\(03\)00108-9](https://doi.org/10.1016/S0191-8869(03)00108-9)
- Crane, A., & Matten, D. (2007). *Managing and implementing corporate social responsibility*. SAGE. doi: <https://doi.org/10.4135/9781446261194>
- Dasgupta, P. (2016). Work engagement of nurses in private hospitals: a study of its antecedents and mediators. *Journal of Health Management*, 18(4), 555-568.  
doi: <https://doi.org/10.1177/0972063416666160>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499-512. doi: <https://doi.org/10.1037/0021-9010.86.3.499>
- Demerouti, E., Bakker, A. B., & Voydanoff, P. (2010). Does home life interfere with or facilitate job performance? *European Journal of Work Organizational Psychology*, 19(2), 128-149. doi: <https://doi.org/10.1080/13594320902930939>

- Ernst Kossek, E., & Ozeki, C. (1998). Work-family conflict, policies, and the job-life satisfaction relationship: a review and directions for organizational behavior-human resources research. *Journal of Applied Psychology*, 83(2), 139-149.  
doi: <https://doi.org/10.1037/0021-9010.83.2.139>
- Felton, J. S. (1998). Burnout as a clinical entity: its importance in health care workers. *Occupational Medicine*, 48(4), 237-250. doi: <https://doi.org/10.1093/occmed/48.4.237>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.  
doi: <https://doi.org/10.1177/002224378101800104>
- Gabel-Shemueli, R., & Dolan, S. L. (2014). Being engaged: the multiple interactions between job demands and job resources and its impact on nurses engagement. *International Journal of Nursing*, 3(2), 17-32.
- Galinsky, E., Bond, J. T., & Swanberg, J. E. (1998). *1997 National study of the changing workforce*. Families and Work Institute, New York.
- Gerbing, D. W., & Hamilton, J. G. (1996). Viability of exploratory factor analysis as a precursor to confirmatory factor analysis. *Structural Equation Modeling: A Multidisciplinary Journal*, 3(1), 62-72. doi: <https://doi.org/10.1080/10705519609540030>
- Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. (2008). A meta-analysis of work demand stressors and job performance: examining main and moderating effects. *Personnel Psychology*, 61(2), 227-271. doi: <https://doi.org/10.1111/j.1744-6570.2008.00113.x>
- Gorgievski, M. J., Bakker, A. B., & Schaufeli, W. B. (2010). Work engagement and workaholism: comparing the self-employed and salaried employees. *The Journal of Positive Psychology*, 5(1), 83-96. doi: <https://doi.org/10.1080/17439760903509606>
- Green Jr, P. I., Finkel, E. J., Fitzsimons, G. M., & Gino, F. (2017). The energizing nature of work engagement: toward a new need-based theory of work motivation. *Research in Organizational Behavior*, 37, 1-18. doi: <https://doi.org/10.1016/j.riob.2017.10.007>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76-88. doi: <https://doi.org/10.2307/258214>
- Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: an ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, 5(1), 111-126.  
doi: <https://doi.org/10.1037/1076-8998.5.1.111>
- Gutermann, D., Lehmann-Willenbrock, N., Boer, D., Born, M., & Voelpel, S. C. (2017). How leaders affect followers' work engagement and performance: integrating leader-member exchange and crossover theory. *British Journal of Management*, 28(2), 299-314.  
doi: <https://doi.org/10.1111/1467-8551.12214>
- Harman, H. H. (1976). *Modern factor analysis*. University of Chicago Press.
- Green Jr, P. I., Finkel, E. J., Fitzsimons, G. M., & Gino, F. (2017). The energizing nature of work engagement: toward a new need-based theory of work motivation. *Research in Organizational Behavior*, 37, 1-18. doi: <https://doi.org/10.1016/j.riob.2017.10.007>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76-88. doi: <https://doi.org/10.2307/258214>



- Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: an ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, 5(1), 111-126.  
doi: <https://doi.org/10.1037/1076-8998.5.1.111>
- Gutermann, D., Lehmann-Willenbrock, N., Boer, D., Born, M., & Voelpel, S. C. (2017). How leaders affect followers' work engagement and performance: integrating leader-member exchange and crossover theory. *British Journal of Management*, 28(2), 299-314.  
doi: <https://doi.org/10.1111/1467-8551.12214>
- Harman, H. H. (1976). *Modern factor analysis*. University of Chicago Press.
- Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling* [White paper]. Retrieved from <https://cutt.ly/uA2p9x9>
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. Guilford Publications.
- Hayes, B. E., Perander, J., Smecko, T., & Trask, J. (1998). Measuring perceptions of workplace safety: development and validation of the work safety scale. *Journal of Safety Research*, 29(3), 145-161. doi: [https://doi.org/10.1016/S0022-4375\(98\)00011-5](https://doi.org/10.1016/S0022-4375(98)00011-5)
- Herzberg, F. (1966). *Work and the nature of man*. Cleveland.
- Herzberg, F., Bernard, M., & Bloch, S. B. (1959). *The motivation to work*. Wiley.
- Hofmann, D. A., & Morgeson, F. P. (1999). Safety-related behavior as a social exchange: the role of perceived organizational support and leader-member exchange. *Journal of Applied Psychology*, 84(2), 286-296. doi: <https://doi.org/10.1037/0021-9010.84.2.286>
- Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. doi: <https://doi.org/10.1080/10705519909540118>
- James, R. (2019). Repatriates' work engagement: proactive behavior, perceived support, and adjustment. *Journal of Career Development*, 48(5), 686-700.  
doi: <https://doi.org/10.1177/0894845319886104>
- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). *Organizational stress: studies in role conflict and ambiguity*. John Wiley.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692-724.  
doi: <https://doi.org/10.5465/256287>
- Karatepe, O. M., & Karadas, G. (2016). Service employees' fit, work-family conflict, and work engagement. *Journal of Services Marketing*, 30(5), 554-566.  
doi: <https://doi.org/10.1108/JSM-02-2015-0066>
- Karatepe, O. M., Rezapouraghdam, H., & Hassannia, R. (2020). Job insecurity, work engagement and their effects on hotel employees' non-green and nonattendance behaviors. *International Journal of Hospitality Management*, 87, 102472.  
doi: <https://doi.org/10.1016/j.ijhm.2020.102472>
- Kazmi, R., Amjad, S., & Khan, D. (2008). Occupational stress and its effect on job performance. a case study of medical house officers of district Abbottabad. *Journal of Ayub Medical College Abbottabad*, 20(3), 135-139.

- Khan, A. S., & Rasheed, F. (2015). Human resource management practices and project success, a moderating role of Islamic work ethics in Pakistani project-based organizations. *International Journal of Project Management*, 33(2), 435-445.  
doi: <https://doi.org/10.1016/j.ijproman.2014.08.006>
- Khan, K., Abbas, M., Gul, A., & Raja, U. (2015). Organizational justice and job outcomes: moderating role of Islamic work ethic. *Journal of Business Ethics*, 126(2), 235-246.  
doi: <https://doi.org/10.1007/s10551-013-1937-2>
- Klein, C. J., Weinzimmer, L. G., Cooling, M., Lizer, S., Pierce, L., & Dalstrom, M. (2020). Exploring burnout and job stressors among advanced practice providers. *Nursing outlook*, 68(2), 145-154. doi: <https://doi.org/10.1016/j.outlook.2019.09.005>
- Knighta, C., Pattersona, M., & Dawsona, J. (2019). Work engagement interventions can be effective: a systematic review. *European Journal of Work and Organizational Psychology* 28(3), 348-372. doi: <https://doi.org/10.1080/1359432X.2019.1588887>
- Lazarus, R. S., & Folkman, S. (1984). Coping and adaptation. In *the handbook of behavioral medicine* (pp. 282-325). Guilford.
- Lebron, M., Tabak, F., Shkoler, O., & Rabenu, E. (2018). Counterproductive work behaviors toward organization and leader-member exchange: the mediating roles of emotional exhaustion and work engagement. *Organization Management Journal*, 15(4), 159-173.  
doi: <https://doi.org/10.1080/15416518.2018.1528857>
- Leiter, M. P., & Maslach, C. (2003). Areas of worklife: A structured approach to organizational predictors of job burnout. In *Emotional and physiological processes and positive intervention strategies*. Emerald Group Publishing Limited.  
doi: [https://doi.org/10.1016/S1479-3555\(03\)03003-8](https://doi.org/10.1016/S1479-3555(03)03003-8)
- Lewis, S., Rapoport, R., & Gambles, R. (2003). Reflections on the integration of paid work and the rest of life. *Journal of Managerial Psychology*, 18(8), 824-841.  
doi: <https://doi.org/10.1108/02683940310511908>
- Loeppke, R., Boldrighini, J., Bowe, J., Braun, B., Eggins, E., Eisenberg, B. S., Grundy, P., Hohn, T., Hudson, T. W., & Kannas Jr, J. (2017). Interaction of health care worker health and safety and patient health and safety in the US health care system: recommendations from the 2016 summit. *Journal of Occupational Environmental Medicine*, 59(8), 803-813. doi: <https://doi.org/10.1097/JOM.0000000000001100>
- Mache, S., Vitzthum, K., Klapp, B. F., & Danzer, G. (2014). Surgeons' work engagement: influencing factors and relations to job and life satisfaction. *The Surgeon*, 12(4), 181-190.  
doi: <https://doi.org/10.1016/j.surge.2013.11.015>
- Makikangas, A., Aunola, K., Seppala, P., & Hakanen, J. (2016). Work engagement—Team performance relationship: shared job crafting as a moderator. *Journal of Occupational Oanizational Psychology*, 89(4), 772-790. doi: <https://doi.org/10.1111/joop.12154>
- Matthews, R. A., Kath, L. M., & Barnes-Farrell, J. L. (2010). A short, valid, predictive measure of work-family conflict: Item selection and scale validation. *Journal of Occupational Health Psychology*, 15(1), 75-90. doi: <https://doi.org/10.1037/a0017443>

- Mazloun, A., Kumashiro, M., Izumi, H., & Higuchi, Y. (2008). Quantitative overload: a source of stress in data-entry VDT work induced by time pressure and work difficulty. *Industrial Health*, 46(3), 269-280. doi: <https://doi.org/10.2486/indhealth.46.269>
- Miller, R. L., Griffin, M. A., & Hart, P. M. (1999). Personality and organizational health: the role of conscientiousness. *Work & Stress*, 13(1), 7-19. doi: <https://doi.org/10.1080/026783799296156>
- Murtaza, G., Abbas, M., Raja, U., Roques, O., Khalid, A., & Mushtaq, R. (2016). Impact of Islamic work ethics on organizational citizenship behaviors and knowledge-sharing behaviors. *Journal of Business Ethics*, 133(2), 325-333. doi: <https://doi.org/10.1007/s10551-014-2396-0>
- Neal, A., & Griffin, M. A. (2006). A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels. *Journal of Applied Psychology*, 91(4), 946-953. doi: <https://doi.org/10.1037/0021-9010.91.4.946>
- Ng, T. W., Sorensen, K. L., Zhang, Y., & Yim, F. H. (2019). Anger, anxiety, depression, and negative affect: Convergent or divergent? *Journal of Vocational Behavior*, 110, 186-202. doi: <https://doi.org/10.1016/j.jvb.2018.11.014>
- Nunnally, J. C. (1994). *Psychometric theory 3E*. Tata McGraw-hill Education.
- Olugbade, O. A., & Karatepe, O. M. (2019). Stressors, work engagement and their effects on hotel employee outcomes. *The Service Industries Journal*, 39(3-4), 279-298. doi: <https://doi.org/10.1080/02642069.2018.1520842>
- Parboteeah, K. P., Paik, Y., & Cullen, J. B. (2009). Religious groups and work values: A focus on Buddhism, Christianity, Hinduism, and Islam. *International Journal of Cross Cultural Management*, 9(1), 51-67. doi: <https://doi.org/10.1177/1470595808096674>
- Parker, S. K., Axtell, C. M., & Turner, N. (2001). Designing a safer workplace: Importance of job autonomy, communication quality, and supportive supervisors. *Journal of Occupational Health Psychology*, 6(3), 211-228. doi: <https://doi.org/10.1037/1076-8998.6.3.211>
- Peterson, D. S., Miller, L. H., & Wellems, T. E. (1995). Isolation of multiple sequences from the Plasmodium falciparum genome that encode conserved domains homologous to those in erythrocyte-binding proteins. *Proceedings of the National Academy of Sciences*, 92(15), 7100-7104. doi: <https://doi.org/10.1073/pnas.92.15.7100>
- Rawwas, M. Y., Javed, B., & Iqbal, M. N. (2018). Perception of politics and job outcomes: moderating role of Islamic work ethic. *Personnel Review*, 47(1), 74-94. doi: <https://doi.org/10.1108/PR-03-2016-0068>
- Rice, G. (1999). Islamic ethics and the implications for business. *Journal of Business Ethics*, 18(4), 345-358. doi: <https://doi.org/10.1023/A:1005711414306>
- Robledo, E., Zappala, S., & Topa, G. (2019). Job crafting as a mediator between work engagement and wellbeing outcomes: a time-lagged study. *International Journal of Environmental Research and Public Health*, 16(8), 1376. doi: <https://doi.org/10.3390/ijerph16081376>
- Rice, G. (1999). Islamic ethics and the implications for business. *Journal of Business Ethics*, 18(4), 345-358. doi: <https://doi.org/10.1023/A:1005711414306>

- Robledo, E., ZappalĂă, S., & Topa, G. (2019). Job crafting as a mediator between work engagement and wellbeing outcomes: a time-lagged study. *International Journal of Environmental Research and Public Health*, 16(8), 1376.  
doi: <https://doi.org/10.3390/ijerph16081376>
- Rogers, A. E., Hwang, W.-T., Scott, L. D., Aiken, L. H., & Dinges, D. F. (2004). The working hours of hospital staff nurses and patient safety. *Health Affairs*, 23(4), 202-212.  
doi: <https://doi.org/10.1377/hlthaff.23.4.202>
- Sachedina, A. (2001). *The Islamic roots of democratic pluralism*. Oxford University Press.  
doi: <https://doi.org/10.1093/acprof:oso/9780195139914.001.0001>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. *Handbook of Market Research*, 26(1), 1-40.  
doi: [https://doi.org/10.1007/978-3-319-05542-8\\_15-1](https://doi.org/10.1007/978-3-319-05542-8_15-1)
- Schaufeli, W., Taris, T., Le Blanc, P., Peeters, M., Bakker, A., & De Jonge, J. (2001). Does work make happy? in search of the engaged worker. *De Psycholoog*, 36(9), 422-428.
- Schaufeli, W. B., & Bakker, A. B. (2010). *Defining and measuring work engagement: Bringing clarity to the concept*. In *Work engagement: a handbook of essential theory research* (Vol. 12, pp. 10-24). Taylor & Francis Group.
- 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. doi: <https://doi.org/10.1177/0013164405282471>
- Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: a two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92.  
doi: <https://doi.org/10.1023/A:1015630930326>
- Sen, A. (1993). *Capability and well-being* 73. In *The quality of life* (Vol. 30, pp. 270-293). Oxford University Press. doi: <https://doi.org/10.1093/0198287976.003.0003>
- Shanafelt, T. D., West, C. P., Sinsky, C., Trockel, M., Tutty, M., Satele, D. V., ... & Dyrbye, L. N. (2019). Changes in burnout and satisfaction with work-life integration in physicians and the general US working population between 2011 and 2017. In *Mayo Clinic Proceedings*, 94(9), 1681-1694). Elsevier. doi: <https://doi.org/10.1016/j.mayocp.2015.08.023>
- Shirom, A., Nirel, N., & Vinokur, A. D. (2006). Overload, autonomy, and burnout as predictors of physicians' quality of care. *Journal of Occupational Health Psychology*, 11(4), 328-342. doi: <https://doi.org/10.1037/1076-8998.11.4.328>
- Sonnentag, S. (2018). The recovery paradox: Portraying the complex interplay between job stressors, lack of recovery, and poor well-being. *Research in Organizational Behavior*, 38, 169-185. doi: <https://doi.org/10.1016/j.riob.2018.11.002>
- Spector, P. E. (2011). The relationship of personality to counterproductive work behavior (CWB): An integration of perspectives. *Human Resource Management Review*, 21(4), 342-352. doi: <https://doi.org/10.1016/j.hrmr.2010.10.002>
- Syed, J., & Ali, A. J. (2010). Principles of employment relations in Islam: a normative view. *Employee Relations*, 32(5), 454-469. doi: <https://doi.org/10.1108/01425451011061630>



- Syrek, C. J., Apostel, E., & Antoni, C. H. (2013). Stress in highly demanding IT jobs: transformational leadership moderates the impact of time pressure on exhaustion and work-life balance. *Journal of Occupational Health Psychology*, 18(3), 252-261. doi: <https://doi.org/10.1037/a0033085>
- Ten Brummelhuis, L. L., & Bakker, A. B. (2012). Staying engaged during the week: the effect of off-job activities on next day work engagement. *Journal of Occupational Health Psychology*, 17(4), 445-455. doi: <https://doi.org/10.1037/a0029213>
- Tenney, E. R., Poole, J. M., & Diener, E. (2016). Does positivity enhance work performance?: why, when, and what we don't know. *Research in Organizational Behavior*, 36, 27-46. doi: <https://doi.org/10.1016/j.riob.2016.11.002>
- Tezcur, G. M., Azadarmaki, T., & Bahar, M. (2006). Religious participation among Muslims: Iranian exceptionalism. *Critique: Critical Middle Eastern Studies*, 15(3), 217-232. doi: <https://doi.org/10.1080/10669920600997035>
- Thomas, L. T., & Ganster, D. C. (1995). Impact of family-supportive work variables on work-family conflict and strain: a control perspective. *Journal of Applied Psychology*, 80(1), 6-15. doi: <https://doi.org/10.1037/0021-9010.80.1.6>
- Thompson, C. A., Beauvais, L. L., & Lyness, K. S. (1999). When work-family benefits are not enough: the influence of work-family culture on benefit utilization, organizational attachment, and work-family conflict. *Journal of Vocational Behavior*, 54(3), 392-415. doi: <https://doi.org/10.1006/jvbe.1998.1681>
- Toyama, H., & Mauno, S. (2017). Associations of trait emotional intelligence with social support, work engagement, and creativity in Japanese eldercare nurses. *Japanese Psychological Research*, 59(1), 14-25. doi: <https://doi.org/10.1111/jpr.12139>
- Tufail, M., Shahzad, K., Gul, A., & Khan, K. (2017). The impact of challenge and hindrance stressors on job satisfaction: Moderating role of Islamic work ethics. *Journal of Islamic Business Management*, 7(1), 100-113. doi: <https://doi.org/10.26501/jibm/2017.0701-008>
- Verweij, H., van Hooff, M. L., van der Heijden, F. M., Prins, J. T., Lagro-Janssen, A. L., van Ravesteijn, H., & Speckens, A. E. (2017). The relationship between work and home characteristics and work engagement in medical residents. *Perspectives on Medical Education*, 6(4), 227-236. doi: <https://doi.org/10.1007/s40037-017-0364-y>
- Weinberg, A., & Creed, F. (2000). Stress and psychiatric disorder in healthcare professionals and hospital staff. *The Lancet*, 355(9203), 533-537. doi: [https://doi.org/10.1016/S0140-6736\(99\)07366-3](https://doi.org/10.1016/S0140-6736(99)07366-3)
- Weissman, R. (2001). Global management by stress. *Multinational Monitor*, 22(7/8), 19-22.
- Wharton, A. S., & Erickson, R. I. (1993). Managing emotions on the job and at home: understanding the consequences of multiple emotional roles. *Academy of Management Review*, 18(3), 457-486. doi: <https://doi.org/10.5465/amr.1993.9309035147>
- Williams, L. J., & McGonagle, A. K. (2016). Four research designs and a comprehensive analysis strategy for investigating common method variance with self-report measures using latent variables. *Journal of Business Psychology*, 31(3), 339-359. doi: <https://doi.org/10.1007/s10869-015-9422-9>

- Wolfe, K., & Kim, H. J. (2013). Emotional intelligence, job satisfaction, and job tenure among hotel managers. *Journal of Human Resources in Hospitality & Tourism*, 12(2), 175-191. doi: <https://doi.org/10.1080/15332845.2013.752710>
- Yip, A. K. (2004). Embracing Allah and sexuality? South-Asian Non-Heterosexual Muslims in Britain. In *South Asians in the diaspora* (pp. 294-310). Brill. doi: [https://doi.org/10.1163/9789047401407\\_016](https://doi.org/10.1163/9789047401407_016)
- Yousef, D. A. (2000). Organizational commitment as a mediator of the relationship between Islamic work ethic and attitudes toward organizational change. *Human Relations*, 53(4), 513-537. doi: <https://doi.org/10.1177/0018726700534003>
- Yousef, D. A. (2001). Islamic work ethic-A moderator between organizational commitment and job satisfaction in a cross-cultural context. *Personnel Review*, 30(2), 152-169. doi: <https://doi.org/10.1108/00483480110380325>

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