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Author: Muhammad Shahnawaz Adil, Mayra Baig

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Authors Details:	In the order they should appear in the published article:

Author 1 Name:	Muhammad Shahnawaz Adil (Corresponding Author) Department of Management Sciences IQRA University, Gulshan Campus, Block 2, Abid Town, Gulshan-e-Iqbal, Karachi-75300, Pakistan Email: adil.s@iuk.edu.pk Tel: +92-213-4800671

Author 2 Name:	Mayra Baig MBA Graduate, IQRA University, Karachi, Pakistan

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Impact of Job Demands-Resources Model on Burnout and Employee's Well-Being: Evidence from the Pharmaceutical Organisations of Karachi

Abstract

This study investigates the impact of job demands-resources (JD-R) model on burnout and well-being. A sample of 352 responses is drawn from the pharmaceutical companies of Karachi. The JD-R model includes workload, autonomy, work/life imbalance, time pressure and feedback. The results show that only three JD-R variables (workload, autonomy, and work-life imbalance) have significant impact on burnout which in turn, shows a significant negative impact on employee's well-being. Both managerial implications and areas for future research are discussed. This study makes contribution in empirically testing the application of JD-R model particularly in the context of pharmaceutical companies of Pakistan.

Keywords: burnout; job demands-resources; pharmaceutical; structural equation modeling; well-being; Pakistan.

Extended Summary

The impact of job-demands and resources in developing burnout and the looming concerns of employee's well-being have been an under-studied area in Pakistan. This study investigates the impact of job demands-resources model on burnout and well-being. A sample of 352 responses is collected from the pharmaceutical companies of Karachi using a cross-sectional research design. The JD-R model includes workload, autonomy, work-life imbalance, time pressure and feedback. The measurement model shows a very good composite reliability in addition to construct, convergent and discriminant validity. The structural equation modeling method was used to test the six hypotheses. The results reveal that only three JD-R variables (i.e. workload, autonomy, and work-life imbalance) have significant impact on burnout (with the exception of time pressure and feedback) in the pharmaceutical sector of Karachi. Moreover, burnout has also shown a significant negative impact on well-being of employees. The SEM analysis reflects a very good model fit with the sample drawn. Both managerial implications and areas for future research are discussed. This study makes unique contribution in empirically testing the application of JD-R model particularly in the context of pharmaceutical companies of Karachi (Pakistan).

Introduction

Human resources are the biological assets of an organisation who serve as one of the key elements for sustainable success (Khurana, Khurana, & Sharma, 2010). Healthy and motivated employees perform better at workplace by demonstrating encouragement thus consistently contribute towards achieving organisational goals. Self-directed or intrinsic motivation at work is positively associated with the work performance as outcome (Kuvaas, 2009). A profession involves different causes of employee's well-being which may be predicted by using the job demands-resources (henceforth, JD-R) model (Bakker & Demerouti, 2007; Bakker, Demerouti, De Boer & Schaufeli, 2003; Bakker, Demerouti, & Sanz-Verge, 2014; Bakker, Demerouti, Taris, Schaufeli & Schreurs, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001). This overarching model classifies these causes into two different categories (i.e. job demands and job resources).

Job demands consist of those factors (such as time pressure and workload) which reduce health and energy causing severe mental disorder over the period of time and eventually, low employee performance (Demerouti & Bakker, 2011). Employees start to invest more time to accomplish higher job demands which severely mutilate their work-life balance. In the beginning, they tend to put their maximum physical and mental efforts to effectively manage occupational stress (called 'adjustive reaction') even at the cost of their health (well-being). This problem further stimulates when there is a high unemployment rate in the job market forcing the

employees to stay on the job (Meyer & Allen, 1991). As a result, this additional workload, time pressure and work-life imbalance create a burnout condition which could seriously threaten their well-being. Job demands are positively associated with burnout. It means that employees suffer from burnout if they remain unsuccessful to effectively and efficiently manage their workload within stipulated time. In other words, the state of burnout is generally observed due to higher job demands and insufficient job resources available to them. As a result, the top management of the organisation would initially face low engagement and commitment from employees and later on, a high intention to leave the organisation (Hu, Schaufeli, & Taris, 2011).

In contrast, job resources comprise of different factors (e.g. management support, supervisors' feedback, skills development, autonomy etc.) which motivate employees and mitigate the repercussion of higher job demands (Demerouti & Bakker, 2011). The management provides appropriate financial and non-financial job resources to employees in review to achieve better performance. In fact, job resources serve as a buffer in reaching organisational goals when job demands are high.

The pharmaceutical industry of Pakistan is mainly affected by hypercompetition. Noticeably, D'Aveni (1995) coined this strategic perspective and described that hypercompetition represents the dynamics of strategic manoeuvring among global and domestic market players due to rapid changes. These market changes include fierce competition among combatants to establish first-mover advantage, dynamic thrust to create new knowledge about product or service offerings, frequent strategic alliances to gain more market share, dynamic and recurrent major consolidation of healthcare industries, and price-quality positioning. He further argued that hypercompetitive markets tend to reflect a high frequency of bold and aggressive decisions which cause a constant disequilibrium in the market place. Consequently, the

marketers and strategists observe market instability due to hypercompetition in the form of shorter product life and design cycles, new innovative technologies and above all, deep-seated redefinition of market boundaries due to frequent mergers and acquisitions.

Here in Karachi, the pharmaceutical industries are not free from the repercussions of hypercompetition. For instance, there are over 1,500 pharmaceutical companies in Pakistan (including multinationals, nationals and franchises) and for one salt there are approximately 25 to 50 pharmaceutical and bio-technology companies competing against one another. This level of fierce competition often turns out to exert significant amount of pressure and hindrances on pharmaceutical companies to gain or even sustain their competitive advantage. In the past, almost 15 years ago, number of pharmaceutical product lines and their brand extensions were the main source of competitive advantage however, nowadays, because of this hypercompetition, the number of manufacturing facilities (plants), ISO certifications and total number of field force are attributed to the main sources of competitive advantage. This paradigm shift is mainly because of the fact that there has not been any research on the generic molecules of both medicines and drugs in Pakistan for the last 12 years. As a result, mainly national pharmaceutical and bio-tech companies are more inclined towards either increasing their field force for deep penetration into the remote areas or making efforts to conform to ISO 9000 certification.

At strategic level, the industry has been facing a moderately higher rate of mergers and acquisitions (M&A). According to a recent report (Pharma Industry M&A, 2016), only in the last two decades, 60 pharmaceutical companies have been transformed into 10 big organizations namely, Pfizer, Novartis, Sanofi, Roche, Merck & Co., Johnson & Johnson, AstraZeneca, GlaxoSmithKline, Teva, and Gilead. All of these firms operate in Pakistan mainly in Karachi. These major M&A transactions amounted to over billions of US dollars. By virtue of frequent M&A in Karachi, pharmaceutical companies started to reduce the size of their workforce in

order to remain more competitive in the lucrative market. In the light of hypercompetition, these companies tend to revisit their different working practices (e.g. upgrading annual and monthly sales targets) thereby put more pressure on their salesforce to meet these revised sales targets.

Due to the nature of pharmaceutical marketing which is carried out directly to the general medical practitioners or physicians, it is generally observed that few national pharmaceutical companies are engaged in unethical practices in which their salesforce directly and openly offer different sorts of monetary benefits including gifts, laptops, sponsoring national and international family tours, etc. The main objective of these unethical practices mainly in this industry is to motivate a physician to prescribe their medicines. Besides, it increases the sales revenue of a particular national pharmaceutical company which normally involves these malpractices too which have reverted an excessive pressure on big multinational pharmaceutical companies (MNCs) operating in Karachi.

Although, MNCs and national companies generally possess advantages in resource-based and institution-based strategies respectively (Guillén & García-Canal, 2009), they are compelled to revitalise their 'national' working standards in Karachi to deal with this hypercompetition without compromising on their product quality and pricing. Since the national pharmaceutical companies destroy their competitors' advantages, it further escalates competition into hypercompetition (D'Aveni, 1995). Indeed, hypercompetition in the pharmaceutical industries of Pakistan introduces more challenges due to an increase in job demands with limited job resources. Moreover, due to high unemployment rate in Karachi, employees tend to work relatively harder to bring efficiency and effectiveness as they often may not afford to lose their employment. Consequently, they are compelled to do long duty hours, manage excessive workload, multiple day and night work shifts, in addition to overtimes on weekends which eventually endanger employee's well-being at workplace.

While discussing the effects of hypercompetition, it is generally observed that chronically-exhausted employees are more prone to face burnout syndrome which lead them to show a pessimistic and unenthusiastic work behaviours. Consequently, these deviant behaviours not only impair employees' job performance but also threaten their well-being (Bakker, Demerouti, & Sanz-Verge, 2014). The structural aspects of the work environment (particularly high job demands and low job resources) normally cause burnout syndrome (Alarcon, 2011; Demerouti et al., 2001; Lee & Ashforth, 1996). As a result, employees tend to adapt unfair means to accomplish high job demands (Swider & Zimmerman, 2010).

Furthermore, lack of autonomy (within capacity) and constructive performance feedback from their superiors limit employees' freedom to act and take timely decisions in their jobs. They are delimited to meet project deadlines with time constraints while conforming to strict regulatory guidelines. These factors eventually lead to develop occupational stress and latent conflicts because of their inability to properly manage work-life balance. Impaired health conditions do not allow employees to effectively concentrate on their duties rendering them unable to give better job performance as they do not feel vigour (or energy/stamina) to remain enthusiastic on different competitive assignments. In the past, it has been argued that vigour is a dimension of work engagement which is seriously affected if employees suffer from burnout (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002).

In addition, the high job demands and low job resources not only increase probability of burnout among employees but also it is reflected in the form of physiological and psychological disorder. Burnout is linked with the reduced resources provided to accomplish a task at workplace (Demerouti et al., 2001). For instance, smaller national pharmaceutical companies do not acquire the services of distributors to market their products hence, their field force are additionally required to ensure timely distribution of pharmaceutical products to their respective

medical stores or chemists. This additional workload originates a wide range of operational and logistic challenges. For example, it is in the interest of a chemist to buy a pharmaceutical product from a sales representative which offers competitively better sales discounts. It implies good negotiation skills of the field force provided they are equipped with adequate financial resources.

Besides, small-scale pharmaceutical firms in Karachi frequently use sordid and offensive statements against less-performing sale representatives in their quarterly sales meetings. This is a looming problem which is further intensified in the form of fatal accidents including suicides if a medical representative frequently remains unsuccessful to meet sales targets resulting a serious threat to their well-being at workplace.

Recently, Bakker and Costa (2014) presented an overarching theoretical model by having chronic burnout as an important moderator of employee 'daily' job performance. They concluded that "chronic burnout strengthens the loss cycle of daily job demands, daily exhaustion, and daily self-undermining, whereas chronic burnout weakens the gain cycle of daily job resources, daily work engagement, and daily job crafting" (p. 117). In contrast, to the best of our knowledge, we found no empirical evidence of the application of JD-R model in Pakistan involving a multivariate structural relationship of workload, time pressure, autonomy, feedback, work-life imbalance with burnout and well-being of employees. Thus, it establishes a strong need of this study in the context of the pharmaceutical companies of Pakistan with the following two research questions:

1) What is the impact of five JD-R variables (including workload, time pressure, autonomy, feedback, work-life imbalance) on burnout?

2) What is the impact of burnout on employee well-being?

Theoretical Background and Development of Hypotheses

The discipline of burnout is among the most popular research topics in occupational health psychology (Bakker & Costa, 2014). It refers to "a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do 'people-work' of some kind." (Maslach & Jackson, 1981, p. 99). In other words, it is defined as "…a state of exhaustion in which one is cynical about the value of one's occupation and doubtful of one's capacity to perform" (Maslach, Jackson, & Leiter, 1996, p. 20). Burnout reflects an increased sagacity of emotional exhaustion which normally deteriorates the quality of care and services that an employee provides to his/her stakeholders (Freudenberger, 1974 & 1975). Burnout mainly consists of three dimensions: emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Jackson, 1981).

JD-R model was first introduced by Demerouti et al. (2001) in the context of burnout with two main composites of an occupation: job demands and resources. According to Demerouti and Bakker (2011, p. 2), "Job demands refer to those physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs". Some of the examples include high work pressure, inadequate, working-hour inflexibility, unfavourable working conditions, etc. Interestingly, job demands are not necessarily negative, they are merely the requirements of one's job; it turns into job stressors when the employee needs to put more efforts to meet the targets however, remains unsuccessful to manage high job demands (Meijman & Mulder, 1998).

In contrast, "Job resources refer to those physical, psychological, social, or organisational aspects of the job that are either/or: 1) functional in achieving work goals; 2) reduce job demands and the associated physiological and psychological costs; and 3) stimulate personal growth,

learning, and development (Demerouti & Bakker, 2011, p. 2). Job resources are not only required to meet high job demands they possess its own significance. The job characteristics model (Hackman & Oldham, 1980) has also emphasised three important job resources i.e. autonomy, tasks significance, and feedback. Holistically, the concept of 'job resources' has also found its roots in conservation of resources theory (Hobfoll, 2001) which holds that the human motivation is largely directed towards their ability to maintain and accumulate resources.

Moreover, Schaufeli and Bakker (2004) proposed a revised model to explain negative state (burnout) as well as added a positive state i.e. work engagement as mediator among job demand and health, also job resources and turnover intentions. Work engagement may be referred as a work oriented encouraging and pleasing state of mind (Schaufeli & Taris, 2014). More recently, Wilson, Sheetz, Djamasbi, and Webber (2014) found that job demands and resources are the most important antecedents for burnout.

Workload and Burnout

Theoretical background for a positive relationship between workload and burnout can be explained by JD-R model. The model reveals that job demands include those attributes of the job which entail physical, emotional and cognitive efforts (Demerouti et al., 2001). Workload has been strongly and vastly associated with the burnout in existing literature. Job demands (workload and interpersonal conflicts) intensify the exhaustion that are directed towards the depersonalization (Karkar, Dammang, & Bouhah, 2015; Maslach, Schaufeli, & Leiter, 2001; Trépanier, Fernet, & Austin, 2013; Westman, Hobfoll, Chen, Davidson, & Laski, 2005).

In particular, previous studies have illustrated that workload is a significant predictor of burnout which has positive impact on emotional exhaustion, depersonalization (Azem, Nazir, Zaidi, & Akhtar, 2014; Xiaoming, Ma, Chang & Shieh, 2014; Droogenbroeck, Spruyt, &

Christophe, 2014). Furthermore, the job demands (e.g. heavy workload) weaken the energy level of employees thus, they experience emotional exhaustion (Montgomery, Panagopolou, & Benos, 2006). Organisational stressors such as workload and co-worker stress are highly associated with professional and psychological distress (Borteyrou, Truchot, & Rascle, 2014). Hence, the following hypothesis is suggested:

Hypothesis 1: Workload is positively associated with burnout.

Time Pressure and Burnout

The JD-R model of burnout may be used to establish the relationship between time pressure and burnout because time pressure has been found positively related with the exhaustion. The demand and control model (Karasek, 1979) focuses on workload and time pressure as key indicators of the job demands and found that increased job demands (mainly workload, time pressure and low job control) cause job strain. These results are consistent with the previous studies revealing that time pressure is significantly associated with the job strain (McMurray et al., 2000; Widmer, Semmer, Kälin, Jacobshagen, & Meier, 2012). In addition, lack of workplace social support and higher job demands (i.e. time pressure) are allied with the burnout and emotional exhaustion (Darawad, Nawafleh, Maharmeh, Hamdan-Mansour, & Azzeghaiby, 2015; Janssen, Jonge, & Bakker, 1999). Hence, the following hypothesis is posited:

Hypothesis 2: Time pressure is positively associated with burnout.

Autonomy and Burnout

The theory of JD-R model holds that higher job demands and low job resources lead to develop burnout among employees. More specifically, autonomy has shown a negative correlation with

burnout in previous studies (e.g. Maslach et al., 2001; Schwab, Jackson, & Schuler, 1986). It means that if employees are facilitated with an appropriate level of autonomy to manage their obligations, it would certainly help them reduce the level of burnout (Adriaenssens, Gucht, & Maes, 2014), emotional exhaustion (Adebayo & Ezeanya, 2011) and depersonalization (Griffin, Hogan, & Lambert, 2012; Lambert, Hogan, Dial, Jiang, & Khondaker, 2012).

In fact, the employees are given sufficient opportunity to prioritise their tasks at workplace so that they could satisfactorily allocate their available resources to these tasks. In other words, with adequate degree of autonomy, employees inherently feel job satisfaction enabling them more confident in managing their duties with available resources. Indeed, this reflects an 'adjustive reaction' against burnout while dealing with occupational stress. Consequently, they observe low rate of burnout as compared with those counterparts who often remain unsuccessful in managing their occupational assignments effectively on time because of not having an appropriate level of job autonomy.

On the same lines, Bakker, Dermerouti, and Euwema (2005) and later on, Zis, Anagnostopoulos, and Sykioti (2014) pointed out that the negative impact of exhaustion due to higher job demands may be mitigated or buffered with an appropriate degree of job autonomy. It mainly helps employees in coping with the increased job demands as they have the freedom to decide when and how to complete the duties. Autonomy may not only drive the employees towards rapid growth but may also be very valuable in combating with hostile working conditions (Tremblay & Messervey, 2011). Since, job autonomy improves work engagement and alleviates burnout syndrome through buffering of workload and emotional demands at workplace (Gabel-Shemueli, Dolan, & Ceretti, 2014), it leads us to suggest the following hypothesis:

Hypothesis 3: Autonomy is negatively associated with burnout.

Feedback and Burnout

The JD-R model assimilates different predictors of burnout hence, and indicate that an increase in job demands (work overload, role conflict, emotional demands) and limited job resources (autonomy, social support and feedback) would serve as key factors in developing burnout syndrome. Similarly, feedback is one of the important psychosocial predictor of burnout (Kozak, Kersten, Schillmoller, & Nienhaus, 2012). Lack of constructive feedback from supervisor can form a noteworthy factor for burnout (Donohoe, Nawawi, Wilker, Schindler, & Jette, 1993; Maslach et al., 2001). However, useful feedback increases employee motivation, job engagement and more propensity of achieving goals (Othman, Ghazali, & Ahmad, 2014; Schaufeli, Bakker, & Rehnen, 2009). Furthermore, positive and timely feedback from supervisor help employees reduce burnout because feedback is associated with the decrease in emotional exhaustion and increase professional achievements (Carlotto, Pizzinato, Rocha, & Machado, 2013; Lambert et al., 2012; Sexton et al., 2014). Hence, the following hypothesis is suggested:

Hypothesis 4: Feedback is negatively associated with burnout.

Work-life Imbalance and Burnout

Previous studies (e.g. Allen, Herst, Burck, & Sutton, 2000; Zis et al., 2014) have argued that work-life imbalances are positively associated with burnout. In particular, a point increase in the score of job demands and resources (e.g. work-life imbalance) leads to develop possible burnout condition by 25.5 percent. A disproportion between work and family life is significantly associated with the emotional exhaustion, depersonalization and increased level of burnout (Laeeque, 2014; Ogungbamila, 2014). Therefore, work-life imbalance is one of the most important antecedents of burnout and individuals who experience work life imbalance are at

greater risk of burnout and job strain (Hämmig, Brauchli, & Bauer, 2012; Mastenbroek et al., 2013; Netemeyer, Boles, & McMurrian, 1996; Queiros, Carlotto, Kaiseler, Dias, & Pereira, 2013; Singh, Suar, & Leiter, 2012). In addition, Peeters, Montgomery, Bakker, and Schaufeli, (2005) argued that work-life imbalance is caused by certain job stressors which guide its way to health problems including burnout. Hence, the following hypothesis is articulated:

Hypothesis 5: Work- life imbalance is positively associated with burnout.

Burnout and Employee's Well-Being

Burnout serves as intervening factor between the job strain and depression. Work related depression can be predicted by the occupational burnout. In previous studies, burnout has fully mediated the relationship between job strain and depression (Ahola & Hajanen, 2007; Ahola, Jakanena, Perhoniemia, & Mutanen 2014; Lin, 2012). The clinical sign and symptoms of burnout include chronic fatigue, emotional distress, cognitive dysfunction, depression, and mainly exhaustion (Soderstrom, Ekstedt, Akerstedt, Nilsson, & Axelsson, 2004). Besides, Melamed, Shirom, Toker, Berliner, and Shapira (2006) argued that health issues including depression, cardiovascular diseases or psychosomatic complaints are generally caused by burnout. Furthermore, Bakker et al. (2014) pointed out that health-related issues are closely associated with burnout.

Previous studies have proposed different models for the health impairment process of burnout. For instance, Schaufeli and Bakker (2004) assumed two psychological processes of job demands and resources: the first one was the health impairment process that leads to health problems through burnout whereas the second process was motivational that significantly reduces the turnover intention via improving job engagement. In addition, Schaufeli and Taris

(2014) revised the JD-R model and illustrated two psychological pathways. In the first pathway higher job demands lead to health impairment process and affect health through burnout whereas the second one is the motivational pathway which demonstrated that presence of adequate amount of job resources reduces the adverse effect of job demands on exhaustion by job engagement which in turn, positively linked with the job performance. However, adequate provision of job-resources may reduce the repercussion of excessive job demands and exhaustion. Hence, the following hypothesis is advised:

Hypothesis 6: Burnout is negatively associated with employee well-being.

<Exhibit 1>

Method

Sample and Procedures

As discoursed earlier in the introduction section how pharmaceutical companies of Karachi are largely affected by hypercompetition in the pharmaceutical-led healthcare sector of Pakistan, it would be worthy-enough to draw a sample from the pharmaceutical industry. In addition, the context of Pakistan is generally an understudied area in the management literature therefore, it creates an opportunity to present evidence from a relatively new sample (Hermelo & Vassolo, 2010). We primarily used an online calculator (i.e. Soper, 2016) to determine a-priori sample size for structural equation models (e.g. Cohen, 1988; Westland, 2010). The process of a-priori sample size calculation includes five different parameters (our given values are stated in parenthesis): the minimum absolute anticipated effect size for the SEM model (0.3 i.e. medium effect size); desired statistical power level (0.80); number of latent variables (7); number of observed variables (43); and probability level/Type-I error rate (0.05). The online calculator recommended 223 sample size however, a minimum sample of 170 responses could be sufficient

enough to detect effect. It is important to note that Faul, Erdfelder, Lang, and Buchner (2007) developed G*Power 3.0 software which calculates the sample size for SEM analysis based on the same aforementioned five parameters.

Since SEM is a large sample technique (Byrne, 2010), we distributed 500 questionnaires in the pharmaceutical companies of Karachi however, we received only 352 responses. The response rate was 70.4 percent. During data screening, a total of 51 univariate and multivariate outliers were detected and removed from the dataset by using standardized z-score with cut-off value |3.29| and Mahalanobis Chi-square distance value respectively at $p < 0.001$, two-tailed test (Tabachnick & Fidell, 2007, pp. 73-74). As a result, the useable responses were 301 (352-51) for data analysis.

In the useable sample, there were 237 male respondents (78.7 percent) and 136 respondents (45.2 percent) were between the age group of 25 to 29 years. In addition, 166 (55.1 percent) and 31 (10.3 percent) respondents held masters and MPhil/PhD degrees. Moreover, over 204 participants (67.8 percent) and 31 participants (10.3 percent) served at middle and the top management level respectively. Exhibit 2 shows the demographics in detail:

<center>*<Exhibit 2>*</center>

Measures

The study includes seven constructs namely, workload, time pressure, autonomy, feedback, work-life imbalance, burnout, and employee's well-being. With no sub-scales, the self-administered questionnaire comprised of a total of 43 items that was measured on a five-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*).

Workload: Workload was measured by five items adapted from Rothmannn, Mostert, and Strydom (2006). A sample item includes "I have too much work to do". The Cronbach alpha was 0.77.

Time Pressure: Time pressure was measured by five items: two items were adapted from Rothmannn et al. (2006) and three items from OSI-R Rating Sheet. A sample item reads "I have to be attentive to many things at a time". The Cronbach alpha was 0.74.

Autonomy: It was measured by seven items: three items are adapted from Rothmannn et al. (2006) and four items from Morgeson and Humphrey (2006). A sample item states "I can take decision independently at my work". The Cronbach alpha was 0.74.

Feedback: It was measured by seven items adapted from Rothmannn et al. (2006). A sample item includes "I can trust on my supervisor when I come across difficulties in my work". The Cronbach alpha was 0.84.

Work/life Imbalance: It was measured by five items: three items were adapted from Netemeyer et al. (1996) and two from Koekemoer, Mostert, and Rothmann (2010). A sample item states "The demands of my work interfere with my home and family life". The Cronbach alpha was 0.93.

Burnout: It was measured by eight items of Malasch Burnout Inventory Questionnaire adapted from Falchi, Baron, and Burnett (2009). A sample item includes "I feel emotionally drained from my work". The Cronbach alpha was 0.76.

*Employee's Well-Being***:** It was measured by using six items adapted from Goldberg and Hillier (1979). A sample item includes "I have recently felt that I couldn't overcome my difficulties". The Cronbach alpha was 0.87.

Statistical Techniques

We used the 22nd version of SPSS and AMOS for data analysis. To reduce a total of 43 Likert-type items into the required seven variables for SEM analysis, exploratory factor analysis (EFA) was first performed in SPSS. Then correlational and reliability statistics were computed of loaded items under each variable. It then follows a confirmatory factor analysis (CFA) in AMOS to validate the theory using a recursive measurement model. Later on, structural equation modeling (SEM) was applied for test hypotheses.

Analysis and Results

Exploratory Factor Analysis

This study used 43 Likert-scale items to measure seven latent constructs. These are variables are 'latent' in nature because they cannot be directly measured mainly in social sciences (Field, 2005, p. 619). Therefore, exploratory factor analysis was performed as a 'data reduction' technique in order to extract seven variables which could ensure convergent, construct and discriminant validity. To achieve this aim, principal component method of factoring was used. The value of 0.875 of Kaiser-Meyer-Olkin (KMO) test exceeded the threshold limit i.e. 0.70 which means that the sample was adequate enough to run exploratory factor analysis (Foster, Barkus, & Yavorsky, 2006; Leech, Barrett, & Morgan, 2005). Besides, the Bartlett's test of sphericity (approx. Chi-square = 3971.771, degree of freedom = 351, p < 0.000) depicts that the correlation matrix is not an identity matrix (Leech et al., 2005; Tabachnick & Fidell, 2007). Exhibit 3 depicts the results of rotated components matrix.

< *Exhibit 3*>

Moreover, to maximize the variance of factor loadings, the initial solution was then rotated through varimax orthogonal rotation with Kaiser Normalization method. As a result, only 27 items were loaded onto their respective variables. Factor loadings less than |0.40| are omitted to maintain clarity. It is important to note that SPSS does not estimate the statistical significance of factor loadings (Field, 2005, p. 637) however, the sample size may give an indication of statistical significance of these loadings (Stevens, 2012). While delineating the convergent validity, Gaskin (2016) clearly stated, "Regardless of sample size, it is best to have loadings greater than 0.500 and averaging out to greater than 0.700 for each factor." As shown in Exhibit 3, the minimum factor loading among all of the 27 loaded items was 0.626 (i.e. WL5) which is well above the prescribed limit of 0.50 and the average of factor loadings is more than 0.70 for each factor. Hence, it may be concluded that the convergent validity has been established.

Exhibit 3 also shows that there is no cross loadings thus the discriminant validity is also ensured (Tharenou, Donohue, & Cooper, 2007). All seven variables possessed more than 1.0 Eigenvalues showing that they qualify to serve as a separate factor hence, can be taken for further data analysis. In addition, they cumulatively accounted for over 67.51 percent of the total variance.

Exhibit 4 shows the means, standard deviations and correlation coefficients of these seven variables. This table shows the significant and non-significant correlations between variables in addition to their magnitude and direction of relationship. For instance, the Pearson correlation between burnout and well-being is represented by r = -0.545 (p<0.01). It shows that burnout has statistically significant, strong and negative correlation with well-being. Since these correlations depict only a bivariate relationship with each other without regard to its ability to

predict the outcome variable, following rigorous statistical analyses were performed to obtain research objectives.

<center>*< Exhibit 4>*</center>

Confirmatory Factor Analysis (Measurement Model)

Confirmatory factor analysis was used in AMOS to validate the hypothesized model (Exhibit 1). It produced a covariance-based measurement model with only 20 observed items classified into seven latent constructs. The measurement model was 'reflective' where Likert scale items serve as functions of the latent variable and changes in the latent variable are reflected in changes in its Likert scale (or indicator) items. Single-headed arrows are used to point out the reflective indicator from the latent variable outward to the Likert scale (or indicator) items (Hair, Ringle, & Sarstedt, 2011). Moreover, as per the guidelines of Hair et al. (2011, p. 145) and Hair, Sarstedt, Ringle, and Mena (2012, p. 429), composite reliability (CR) was estimated which serves as a measure of internal consistency reliability. Therefore, instead of reporting Cronbach's alpha for the reflective measurement model, CR constitutes a better estimate of similar but heterogeneous items (Lin & Lee, 2004; Molina, Montes, & Ruiz-Moreno, 2007).

Exhibit 5 shows the composite reliability, convergent and discriminant validity of the measurement model. It highlights that CR of each of the variables is more than 0.60 (Hair, Black, Babin, & Anderson, 2010; Hair et al., 2011; Hair et al., 2012) ensuring the internal consistency reliability of the reflective measurement model. Moreover, to assess convergent validity, average variance extracted (AVE) is computed for all constructs (Hair et al., 2011; Hair et al., 2012). Exhibit 5 highlights that the value of AVE of each latent construct is more than 0.50 showing a very good convergent validity (Byrne, 2010; Hair et al., 2010).

Besides, to assess discriminant validity, maximum shared variance (MSV), average shared variance (ASV), and inter-construct correlations are also estimated. Both MSV and ASV

are less than their corresponding AVE and according to Fornell and Larcker (1981) criterion, the square root of AVE is greater than the inter-construct correlations of each construct (as shown in boldface on diagonals in Exhibit 5). It means that the discriminant validity of the measurement model is also ensured (Byrne, 2010; Fornell & Larcker, 1981; Hair et al., 2010).

< Exhibit 5>

Furthermore, five different commonly-used goodness-of-fit measures were used in addition to the conventional Chi-square (minimum discrepancy –CMIN) test. They include goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), Tucker-Lewis index (TLI), comparative fit index (CFI) and root mean square error of approximation (RMSEA) (Byrne, 2010; Kline, 2011; Loehlin, 2004; Marcoulides & Schumacker, 2001; Segars & Grover, 1998). Exhibit 6 shows that the ratio of CMIN to degree of freedom of the measurement model was 1.46 ($p < .000$) which is less than the recommended value of 3 (Byrne, 2010). Moreover, rests of the five GOF indices (including GFI = 0.93, AGFI = 0.90, TLI = 0.97, CFI = 0.98, and RMSEA = 0.39 with non-significant PCLOSE) were also found well above the recommended value (Bagozzi & Yi, 1988; Bentler & Bonett, 1980; Browne & Cudeck, 1993; Byrne, 2010). Hence, the measurement model reflects a very good model fit.

< Exhibit 6>

Hypotheses Testing using SEM Analysis

Based on the CFA measurement model, a structural model was constructed using SEM analysis in AMOS to illustrate the multivariate relationship among the five variables of JD-R model, burnout and employee well-being. Exhibit 7 shows that all hypothesized relationships (H_1 through to H_6) are supported. However, both time pressure and feedback have shown a statistically non-significant impact to predict burnout.

< Exhibit 7>

Likewise CFA model, the SEM model shows a very good model fit i.e. CMIN/DF = 1.62 (p<0.001); GFI = 0.92, AGFI = 0.89, TLI = 0.96, CFI = 0.97, and RMSEA = 0.46 with non-significant PCLOSE value (Exhibit 6). The expected cross validation index (ECVI) was also computed in AMOS to assess generalizability. Indeed, Herscovitch and Meyer (2002, p. 479) and recently, Bryne (2010, p. 82) have mentioned that there is no recommended value for ECVI however, a lowest value closer to 1.0 may be used for assessing generalizability. In addition, Loehlin (2004) argued "The smaller the ECVI, the better the model is expected to cross-validate in a new sample…" (p. 254). Exhibit 6 shows the ECVI value for the SEM model (1.21) is very close to 1.0 hence, it may be concluded that the sample may have the potential to be cross-validated on other samples from the same pharmaceutical industries in Karachi (Browne & Cudeck, 1993).

To estimate the effect size of both dependent variables (burnout and well-being), the squared multiple correlation (R^2) was computed. The effect size of burnout and well-being was 0.60 and 0.61 respectively (Exhibit 8). It means that five variables of JD-R model cumulatively explain over 60 percent of the total variance in predicting burnout. Similarly burnout alone explains over 61 percent of the total variance in predicting employee's well-being. Exhibit 8 depicts the multivariate relationship among the five variables of JD-R model, burnout, and employee well-being.

< Exhibit 8>

Discussion

This study posited six hypotheses to examine (1) the impact of five JD-R variables on burnout; and (2) the impact of burnout on employee's well-being in the pharmaceutical companies of Karachi. The results show that only three JD-R variables (namely, workload, autonomy, and

work-life imbalance) have significant impact on burnout (with the exception of time pressure and feedback). Moreover, burnout has also shown a significant negative impact on well-being of employees. The SEM analysis also reflects a very good model fit with the sample drawn which may also be cross-validated on other samples of the same industry too.

The statistical results reveal that workload has significant positive impact on burnout (standardized coefficient = 0.345; p = 0.000) thus, the hypothesis (H_1) is supported. It indicates that an increase in the amount of workload will also increase burnout. These findings are consistent with Demerouti et al. (2001) who observed that workload has significant impact on the burnout hence, pointed out that increasing in job demands while decreasing job resources leads to emotional exhaustion. Other studies also revealed that workload is strongly correlated with burnout (Maslach et al., 2001). Moreover, workload diminishes the energy level and intensifies exhaustion which eventually reflects in the form of depersonalization (Montgomery et al., 2006; Westman et al., 2005).

The findings of this study clearly indicate that time pressure is positively associated with burnout conditions (0.007; p = 0.382) therefore, the hypothesis (H_2) is supported. Though, this relationship could not reach statistical significance during SEM analysis, it was however, significantly correlated with each other during zero-order Pearson correlation at 99 percent CI i.e. r = 0.266; p<0.01 (Exhibit 4). As discussed in the introduction section that medical representatives of small national firms are additionally responsible to ensure the timely replenishment of pharmaceutical products to the medical stores or chemists, it adds additional workload on their shoulders which becomes very challenging to accomplish within the given stipulated time. This added time pressure severely causes physiological and psychological stress. Consequently, employees not only lose their control at work but also their stress level is further escalated mainly due to indifferent organizational attitude (Sharma, 2015). The state of

It was determined from the results that the autonomy is negatively associated with burnout (-0.203; p = 0.013) thus, the hypothesis (H_3) is supported. It demonstrates that there is a substantial negative correlation found between autonomy and burnout. An increase in autonomy will decrease the level of burnout syndrome. These findings are consistent with Olanrewaju and Ifenna (2011) who have also concluded that job autonomy has substantial negative association with burnout. Other studies also demonstrated the sources which are associated with the development of the burnout and found that the lack of autonomy is positively associated with the burnout (Maslach et al., 2001; Schwab et al., 1986).

The SEM analysis shows that feedback is negatively associated with burnout (-0.029; p = 0.691) hence, the hypothesis (H_4) is supported. Likewise H_2, this hypothesis could not gain statistical significance during SEM analysis, it was however, significantly correlated with each other during zero-order Pearson correlation at 99 percent CI i.e. r = -0.211; p<0.01 (Exhibit 4). Feedback provides a mechanism under JD-R model with appropriate guidelines in order to optimise one's work engagement (Braine & Roodt, 2011). Besides, healthy humorous coping interventions may also contribute in addressing JD-R related issues (Doosje, De Goede, Doornen, & Schoot, 2011).

The results provide strong evidence that work-life imbalance has significant positive impact on burnout (0.382; p = 0.000) hence, the hypothesis (H_5) is supported. An increase in the work and family life imbalances subsequently increases burnout conditions. These findings are consistent with previous studies who have argued that work-life imbalance causes burnout and

occupational strain (Hämmig et al., 2012) and in Indian women software professionals (Valk & Srinivasan, 2011). In fact, increase in work and family life imbalances caused by certain job stressors are associated with the health problems including the development of the burnout (Allen et al., 2000; Netemeyer et al., 1996; Peeters et al., 2005). The repercussion of stress level among R&D professionals may be mitigated by the appropriate leader behaviours which could further promote creativity (Gupta, Singh, & Khatri, 2013).

The research findings elaborate that burnout has significant negative impact on employee's well-being (-0.781, p = 0.000) therefore, the hypothesis (H$_6$) is supported. It indicates that an increase in burnout will have some serious repercussions on employee's well-being. ERP systems are commonly used in the pharmaceutical companies of Karachi and proper health conditions, computer self-efficacy, organizational support, training, and compatibility could possibly increase their technology acceptance level (Rajan & Baral, 2015). These results are supported by previous studies (e.g., Ahola & Hakanen, 2007; Schaufeli & Bakker, 2004) who have also demonstrated that burnout triggers the health impairment process thus, unpleasant effects on health are normally observed e.g., chronic fatigue, emotional distress, cognitive dysfunction, depression, cardiovascular diseases, psychosomatic complaints, and primarily emotional exhaustion (Melamed et al., 2006; Soderstrom et al., 2004). More recently, Schaufeli and Taris (2014) have pointed out that increased job demands predict job strain which cause severe well-being issues.

Conclusion

This study firstly validates the Bakker and Demerouti's (2007) JD-R model in the pharmaceutical companies of Karachi and also analyses its impact on burnout and employee well-being. Results of SEM analysis revealed that job demand and resources have significant

impact on burnout and well-being of employees. Management of the pharmaceutical organizations in Karachi should minimize the workload of their employees and enable them to exercise autonomy within certain capacity. It would help them maintain an adequate balance between their work and family life so that the burnout syndrome may be avoided. Consequently, they would perform better with a good well-being state.

Managerial Implications

Based on the study, it is important to understand that high job demands (e.g. unpleasant work environment, excessive work pressure, work- family imbalances, emotional demands etc.) and fewer job resources (e.g. management / organisational support, freedom to act, relationship with supervisor, performance feedback, etc.) direct towards higher level of exhaustion, disappointments and disbelief. Depletion of job resources reduces employee motivation and learning which eventually induces withdrawal from the organisation (Bakker et al., 2005). Therefore, if the current scenario persists and remains unaddressed, it could not only lead to burnout and serious employee well-being issues but also cause to deteriorate their productivity and engagement. Furthermore, job resources such as feedback, social support, autonomy and career opportunities serve as a motivational tool for employees that lead to increase employee motivation and engagement. Job and personal resources are projected by work engagement which is directed to increase job performance (Bakker, 2011).

The findings of this empirical study provide the management with assistance and support and help them bring constructive changes in the organisation so that the level of burnout could be alleviated in order to ensure better well-being in the pharmaceutical companies of Karachi. The top management should revisit their business policies and practices which involve reduced or manageable workload and an adequate level of independence of managing one's work. The

results of the study also reveal that it is very important to maintain a balance in between work and family life in order to reduce the potential danger of burnout. If this aspect is not well addressed, there could be a greater propensity for the management to encounter a number of well-being or health-related lawsuits.

Finally, it is equally important to identify and then mitigate the unpleasant effect of different measures of job demands and resources with respect to the pharmaceutical industry of Pakistan. Failure to do so would induce withdrawal behavior among employees and create adverse impact on employee's well-being. Job resources serve as motivating factors to optimize employee's zeal and enthusiasm to consistently perform better. It is reflected in the form of better employee engagement which should be maintained across the organisation. It is only possible if managers supervise healthy employees with low burnout syndrome.

Limitations and Directions for Future Research

This study is not free from limitations. Firstly, the sample was drawn from the pharmaceutical companies of Karachi. Therefore, the results may not be cross-validated on a larger population in other large industrial cities of Pakistan such as Lahore, Gujrat, Faisalabad, Sialkot, etc. Secondly, the study used a cross-sectional research design to answer the two research questions. Despite both CFA and SEM models are recursive (i.e. unidirectional) in nature, they do not predict the cause-and-effect relationship between JD-R variables, burnout and well-being which is beyond the scope of this study. Alternatively, future studies may use a longitudinal research design.

In addition, future studies may also conduct semi-structured qualitative interviews with both non-managerial and managerial employees in order to compare the implications of JD-R model with different precursor e.g. psychological safety climate (Idris, Dollard, & Winefield, 2011), commitment to change (Adil, 2016), workplace bullying (Broeck, Baillien, & Witte,

2011), and early retirement intentions (Demerouti & Bakker, 2011; Schreurs, Cuyper, Emmerik, Notelaers, & Witte, 2011). These variables could play an improvising role in causing chronic burnout among employees of other labour-intensive industries of Pakistan (viz. sports goods). Variables such as rewards, procedural justices, social support from supervisor and peers, appreciations and recognitions may be included for the said purpose.

Perhaps in contrast with the Western context, these variables are of great significance in Asian's developing economies (including Pakistan) because the absence of these variables in an organisation could cause high employee turnover rate. Employees tend to join rival organisation or sometimes leave the country in search of better employment. Therefore, future studies may investigate the application of JD-R model in predicting an employee's tendency to immigrate to developed countries.

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Exhibit 1 Conceptual framework of the study
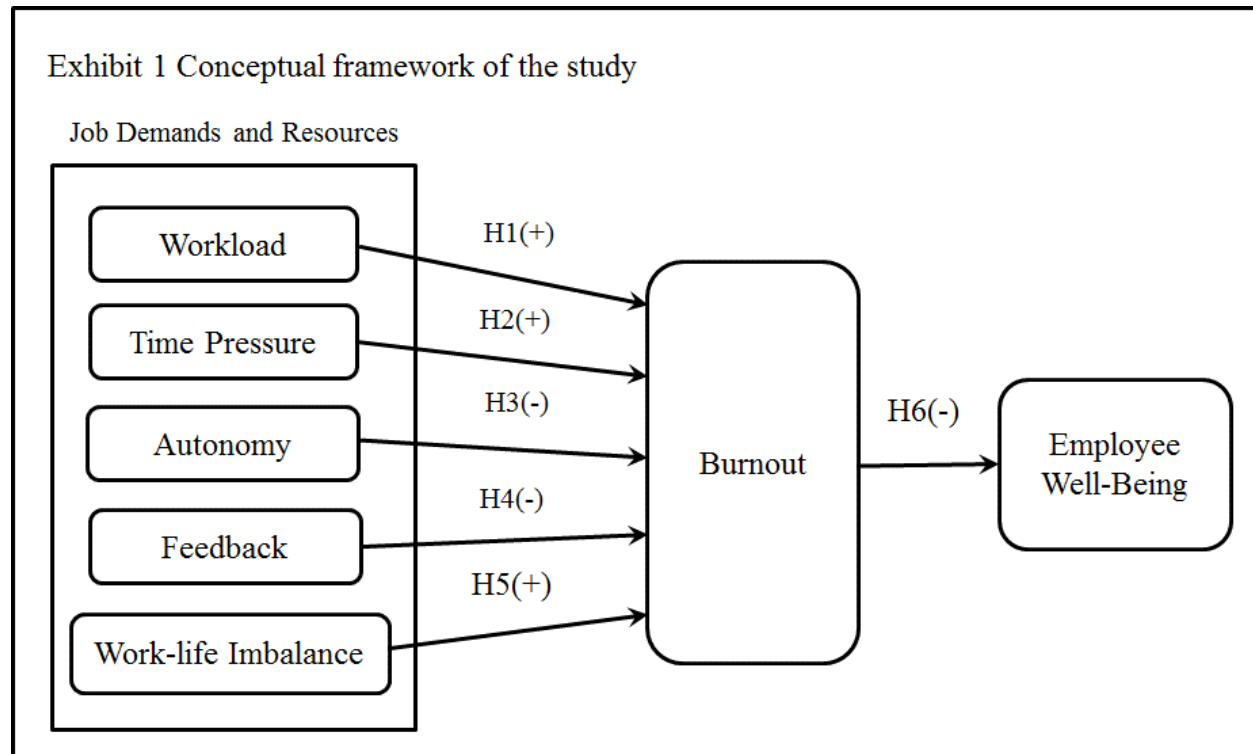
Exhibit 2 Demographic characteristics of the respondents (n=301).

Demographics		Frequency	Percent
Age (in Years)	20-24	30	10
	25-29	136	45.2
	30-34	81	26.9
	35-39	17	5.6
	40 or Above	37	12.3
Gender	Male	237	78.7
	Female	64	21.3
Education	Bachelors	91	30.2
	Masters	166	55.1
	MPhil/PhD	31	10.3
	Others	13	4.3
Level of responsibility	Lower Management	66	21.9
	Middle Management	204	67.8
	Top Management	31	10.3
Marital Status	Single	140	46.5
	Married	161	53.5
Salary per month	<= 30,000	93	30.9
(in Pak Repees)	30,001 to 60,000	124	41.2
	More than 60,000	84	27.9

Source: Authors' estimation.

Exhibit 3 Exploratory factor analysis (n=301)

Indicators	Work/Life Imbalance (WLB)	Feedback (FB)	Employee Well-Being (EWB)	Time Pressure (TP)	Autonomy (AT)	Burnout (BO)	Workload (WL)
WLB3	.870						
WLB4	.870						
WLB5	.846						
WLB2	.841						
FB6		.814					
FB7		.718					
FB2		.714					
FB4		.699					
FB5		.697					
FB3		.679					
EWB5			.878				
EWB6			.838				
EWB4			.735				
EWB2			.635				
TP2				.779			
TP3				.775			
TP5				.666			
TP4				.662			
AT3					.738		
AT6					.736		
AT7					.698		
AT2					.651		
BO5						.780	
BO6						.672	
BO7						.664	
WL4							.804
WL5							.626
Average of Loadings	0.86	0.72	0.77	0.72	0.71	0.71	0.72
Eigenvalues	3.67	3.39	3.06	2.43	2.38	1.95	1.34
% of Variance	13.60	12.56	11.32	9.02	8.81	7.23	4.98
Cumulative %	13.60	26.16	37.48	46.50	55.30	62.53	67.51

Notes: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Exhibit 4 Means, standard deviations and Pearson correlations

	Mean	SD	1	2	3	4	5	6	7
Workload	3.02	1.05	1						
Time Pressure	3.87	0.67	.429**	1					
Autonomy	3.87	0.59	-0.102	.194**	1				
Feedback	3.86	0.66	-.168**	0.073	.406**	1			
Work/Life Imbalance	3.02	1.07	.528**	.280**	-.195**	-.174**	1		
Burnout	2.87	0.93	.465**	.266**	-.203**	-.211**	.539**	1	
Employee Well-Being	3.76	0.90	-.469**	-0.091	.306**	.240**	-.440**	-.545**	1

Notes: **. Correlation is significant at the 0.01 level (2 tailed).

Exhibit 5 Confirmatory factor analysis: composite reliability, convergent and discriminant validity

	Reliability	Convergent Validity	Discriminant Validity & Inter-Construct Correlations using Fornell and Larcker (1981) Criterion								
	CR	AVE	MSV	ASV	1	2	3	4	5	6	7
Burnout	0.76	0.52	0.51	0.27	**0.72**						
Work/Life Imbalance	0.92	0.75	0.42	0.23	0.65	**0.86**					
Feedback	0.76	0.51	0.26	0.09	-0.26	-0.24	**0.71**				
Employee Well-Being	0.84	0.58	0.51	0.26	-0.71	-0.53	0.34	**0.76**			
Time Pressure	0.68	0.52	0.34	0.13	0.42	0.41	0.02	-0.28	**0.72**		
Autonomy	0.67	0.51	0.26	0.10	-0.26	-0.18	0.51	0.41	0.11	**0.71**	
Workload	0.79	0.65	0.39	0.26	0.60	0.62	-0.25	-0.62	0.58	-0.17	**0.81**

Notes: CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance;
ASV = Average Shared Variance. The square root of AVE is shown on diagonal in bold faces.
AVE = ($\sum$ squared standardized loading) / ($\sum$ squared standardized loading + $\sum$ indicator measurement error)
CR = ($\sum$ standardized loading)2 / ($\sum$ standardized loading)2 + $\sum$ indicator measurement error)
where, indicator measurement error = 1 - standardized loading

Exhibit 6 CFA and SEM analysis: measures of model fit

Goodness of fit measures	CMIN	DF	CMIN/DF	GFI	AGFI	TLI	CFI	RMSEA (PCLOSE)	ECVI
Recommended value	N/A	N/A	<3.0[a]	≥0.90[a]	≥0.90[b]	≥0.95[c]	≥0.95[c]	<0.05 (>0.5[d])	Lowest value
CFA Model	214.107	147	1.46	0.93	0.90	0.97	0.98	0.39 (0.9)	1.13
SEM Model	246.673	152	1.62	0.92	0.89	0.96	0.97	0.46 (0.7)	1.21

Notes: N/A =Not Applicable; a=Byrne (2010); b=Bagozzi and Yi (1988); c=Bentler (1990); and d=Browne and Cudeck (1993)
CMIN = minimum discrepancy; DF = degree of freedom; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index
TLI = Tucker-Lewis index; CFI = comparative fit index; RMSEA = root mean square error of approximation;
ECVI = expected cross-validation index

Exhibit 7 Hypothesis testing using SEM analysis

Hypothesis	SEM Regression Path	Unstandardized Estimates	Standard Error	Standardized Estimates	Critical Ratio	P-Value	Expected Sign	Sign Observed	Remarks
H1	Workload to Burnout	0.302	0.088	0.345	3.425	***	Positive	Positive	Supported
H2	Time Pressure to Burnout	0.078	0.089	0.077	0.875	0.382	Positive	Positive	Supported
H3	Autonomy to Burnout	-0.271	0.109	-0.203	-2.484	0.013*	Negative	Negative	Supported
H4	Feedback to Burnout	-0.033	0.083	-0.029	-0.398	0.691	Negative	Negative	Supported
H5	Work-Life Imbalance to Burnout	0.27	0.055	0.382	4.882	***	Positive	Positive	Supported
H6	Burnout to Well-Being	-0.789	0.094	-0.781	8.425	***	Negative	Negative	Supported

Note: $* \ p < 0.05$; $*** \ p < 0.001$

Exhibit 8 Hypothesis testing using SEM Analysis
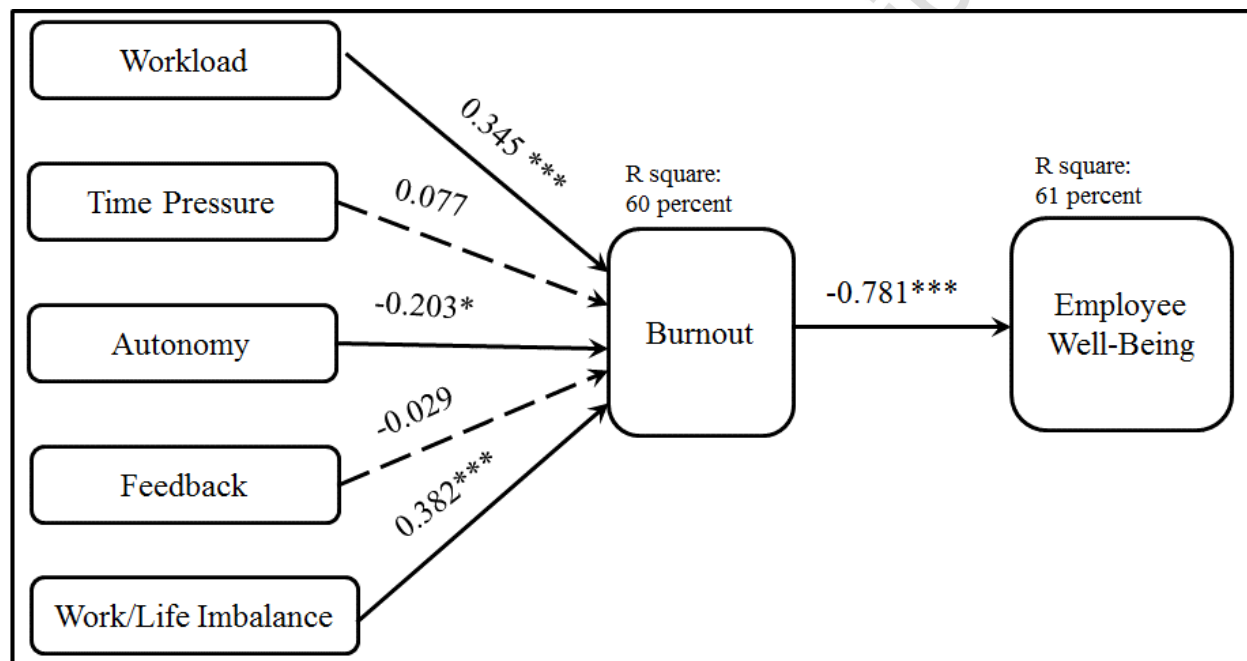
Note: $*p < .05$; $***p < .001$;

———→ Significant regression path

- - - → Insignificant regression path