

BUSINESS REVIEW

THEORETICAL EVIDENCE AND EMPIRICAL INVESTIGATION OF THE IMPACTS OF WOMEN'S PSYCHOLOGICAL NEEDS ON THE ENVIRONMENT, WELL-BEING, AND PERFORMANCE AT WORK

Ashoor Wafa^A, Harizi Riadh^B, Musa Gismelseed Abdelrahim Abbas^C



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ABSTRACT

Purpose: This paper assesses how the satisfaction or frustration of women's psychological needs (PN) influences their performance and well-being within their workplace, both in terms of positive effects and negative effects.

Theoretical framework: We explored how basis PN at work mediate the relationships between work demands—resources characteristics, well-being, and performance at work.

Design/Methodology/Approach: We conduct an electronics survey among 205 Saudi women workers and we do a multivariate analyzes with structural equations and tests with three specified models.

Findings: Job resources are positively related to satisfying women's PN but negatively relate to any frustration of these needs. Job challenges also positively relate to the satisfaction of PN, while job hindrances are negatively related with satisfaction and positively related with the frustration of needs for autonomy, competence, and social affiliation. The satisfaction of PN is positively associated with engagement at work and good performance but negatively associated with burnout. Unsurprisingly, any frustration of PN is positively related to workplace deviance and burnout.

Research, Practical & Social implications: It is important to integrate self-determination theory at work with solid and credible scientific support. Leadership must provide a work environment in which women can tackle challenges and access sufficient resources to satisfy their basic psychological needs. They should reduce negative experiences that frustrate needs and promote positive experiences.

Originality/Value: The study contributes significantly to work and organizational psychology and human resource management by highlighting the nuances between job challenges and hindrances and distinguishes between satisfying and frustrating the women's PN.

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^C PhD in Human Resource Management, Assistant Professor. Department of Business Administration, College of Business, University of Bisha, Bisha 61922, P.O. Box 551, Saudi Arabia. E-mail: gismelseed@ub.edu.sa Orcid: https://orcid.org/0009-0001-8773-0051



^A PhD in Management, Assistant Professor. Department of Business Administration, College of Business, University of Bisha, Bisha 61922, P.O. Box 551, Saudi Arabia. E-mail: waashoor@ub.edu.sa
Orcid: https://orcid.org/0000-0001-6637-7511

^B PhD in Economics, Department of Economics and Quantitative Methods, Higher Institute of Management of Tunis, GEF2A Lab, University of Tunis, Tunisia. E-mail: riadh.harizi@isg.rnu.tn
Orcid: https://orcid.org/0000-0002-0745-6137

EVIDÊNCIAS TEÓRICAS E INVESTIGAÇÃO EMPÍRICA DOS IMPACTOS DAS NECESSIDADES PSICOLÓGICAS DAS MULHERES NO MEIO AMBIENTE, NO BEM-ESTAR E NO DESEMPENHO NO TRABALHO

RESUMO

Objetivo: Este artigo avalia como a satisfação ou frustração das necessidades psicológicas (NE) das mulheres influencia o seu desempenho e bem-estar no local de trabalho, tanto em termos de efeitos positivos como de efeitos negativos.

Referencial teórico: Exploramos como os PEs centrais no trabalho medeiam as relações entre demandas de trabalho, características de recursos, bem-estar e desempenho no trabalho.

Desenho/metodologia/abordagem: Realizamos uma pesquisa eletrônica entre 205 trabalhadoras sauditas e fazemos uma análise multivariada com equações estruturais e testes com três modelos específicos.

Resultados: Os recursos de trabalho estão positivamente relacionados com a satisfação da PN das mulheres, mas negativamente relacionados com qualquer frustração destas necessidades. Os desafios no trabalho também estão positivamente relacionados com a satisfação do PE, enquanto os obstáculos no trabalho estão negativamente relacionados com a satisfação e positivamente relacionados com a frustração das necessidades de autonomia, competência e filiação social. A satisfação do PE está positivamente associada ao envolvimento no trabalho e ao bom desempenho, mas negativamente associada ao burnout. Como esperado, qualquer frustração do NP está positivamente relacionada com o desvio e o esgotamento no local de trabalho.

Investigação, implicações práticas e sociais: É importante integrar a teoria da autodeterminação no trabalho com apoio científico sólido e credível. A liderança deve proporcionar um ambiente de trabalho no qual as mulheres possam enfrentar desafios e aceder a recursos suficientes para satisfazer as suas necessidades psicológicas básicas. Devem reduzir experiências negativas que frustram necessidades e promover experiências positivas.

Originalidade/valor: O estudo contribui significativamente para a psicologia organizacional e do trabalho e para a gestão de recursos humanos, destacando as nuances entre os desafios e obstáculos do trabalho e distinguindo entre PN satisfatório e frustrante das mulheres.

Palavras-chave: Modelo JD-R, Teoria da Autodeterminação, Bem-Estar no Trabalho, Necessidades Psicológicas das Mulheres, Desempenho no Trabalho.

EVIDENCIA TEÓRICA E INVESTIGACIÓN EMPÍRICA DE LOS IMPACTOS DE LAS NECESIDADES PSICOLÓGICAS DE LAS MUJERES EN EL MEDIO AMBIENTE, EL BIENESTAR Y EL DESEMPEÑO EN EL TRABAJO

RESUMEN

Propósito: Este artículo evalúa cómo la satisfacción o frustración de las necesidades psicológicas (NP) de las mujeres influye en su desempeño y bienestar dentro de su lugar de trabajo, tanto en términos de efectos positivos como de efectos negativos.

Marco teórico: Exploramos cómo las NP básicas en el trabajo median las relaciones entre las demandas laborales, las características de los recursos, el bienestar y el desempeño en el trabajo.

Diseño/metodología/enfoque: Realizamos una encuesta electrónica entre 205 trabajadoras sauditas y hacemos un análisis multivariado con ecuaciones estructurales y pruebas con tres modelos específicos.

Hallazgos: Los recursos laborales se relacionan positivamente con la satisfacción de la PN de las mujeres, pero negativamente con cualquier frustración de estas necesidades. Los desafíos laborales también se relacionan positivamente con la satisfacción de la NP, mientras que los obstáculos laborales se relacionan negativamente con la satisfacción y positivamente con la frustración de las necesidades de autonomía, competencia y afiliación social. La satisfacción de la NP se asocia positivamente con el compromiso en el trabajo y el buen desempeño pero negativamente con el burnout. Como era de esperar, cualquier frustración por la NP se relaciona positivamente con la desviación y el agotamiento en el lugar de trabajo.

Implicaciones de investigación, prácticas y sociales: es importante integrar la teoría de la autodeterminación en el trabajo con un respaldo científico sólido y creíble. El liderazgo debe proporcionar un entorno laboral en el que las mujeres puedan afrontar desafíos y acceder a recursos suficientes para satisfacer sus necesidades psicológicas básicas. Deben reducir las experiencias negativas que frustran las necesidades y promover experiencias positivas. Originalidad/valor: El estudio contribuye significativamente a la psicología laboral y organizacional y a la gestión de recursos humanos al resaltar los matices entre los desafíos y obstáculos laborales y distingue entre satisfacer y frustrar la PN de las mujeres.

Palabras clave: Modelo JD-R, Teoría de la Autodeterminación, Bienestar en el Trabajo, las Necesidades Psicológicas de las Mujeres, Rendimiento Laboral.

INTRODUCTION

To avoid the high cost of employee burnout and make workers more efficient, leadership in organizations must strengthen well-being and remedy malaise at work. Researchers have become increasingly interested in finding explanatory mechanisms for engagement and performance at work, so they can build new methods by which leadership in organizations can ensure good working conditions, thus reducing burnout and workplace deviance. Based on the related literature, leadership plays a significant role in inspiring and enthusing followers which, in turn, increases their motivation, commitment and efforts on behalf of an organization. While ensuring work performance and happiness is a goal of leadership, understanding factors that underlie them requires tools from work and organizational psychology. To this end, several theoretical models and empirical research studies have focused on characteristics that favor the well-being and health of workers, including personality factors, the paradox of a happy and productive worker, and working environment conditions.

In contrast, limited empirical research has focused on the relationship between the work environment and the well-being and performance of women at work. The job demands—resources (JD-R) model will therefore be used to evaluate the working conditions of Saudi women.

Thus, this paper aims to investigate the mediating role that women's basic psychological needs plays in the relationship between the work environment and some variables of interest for organizations, namely well-being and performance, using a longitudinal study employing self-reported questionnaires for the first time in the context of working Saudi women. First, to examine the relationship between the JD-R model and the basic psychological needs defined by self-determination theory, we incorporate recent nuances that have been brought up for these models. Second, we explore the relationships between the satisfaction or frustration of psychological needs and work engagement, burnout, work performance, and workplace deviance. Third, we seek to establish if the satisfaction or frustration of psychological needs mediates the relationships between job demands/resources and work engagement, burnout, work performance, and workplace deviance.

LITERATURE REVIEW

Theoretical Foundation of the JD-R Model

The JD-R model aims to predict workers' health and well-being, and it responds to certain criticisms of previous models, such as the job demand-control model of Karasek (1979)

and the effort-reward imbalance model of Siegrist (1996). More specifically, to understand work well-being, Karasek (1979) assumes two crucial aspects in the employment context: job demands (work overload and urgency) and job control (decisional latitude). Other researchers have refined this model by adding employment social support to represent how jobs will be more stressful when there is a heavy workload but limited control and scarce social support. Conversely, job control and social support tend to moderate the negative effects of job demands on some workplace outcomes, such as job satisfaction.

Some shortcomings of Karasek's (1979) model later became evident, thus favoring the emergence of the JD-R model. First, most studies target well-being and assess the negative consequences (e.g., burnout). Second, the JD-R model focuses on specific characteristics of jobs and ignores the possibility that other job characteristics may be more important in predicting well-being. It can therefore be difficult to generalize this model to any employment context. Despite its shortcomings, however, the JD-R model is still used to test whether job control has a moderating effect on the relationship between job demands and well-being. Finally, the JD-R model is based on two propositions: (i) The work environment has two characteristics, and (ii) well-being and ill-being predictions are made according to energy-intensive and motivational processes (Bojovic and Jovanovic, 2020).

Demands and Resources as Characteristics of the Work Environment

Demands represent the physical, psychological, social, or organizational aspects of work that require substantial physical or psychological effort, such as handling a heavy workload, meeting physical demands, or managing work—life conflicts (Bakker et al., 2011; Trépanier et al., 2016). Burnout is the consequence that is most studied with the JD-R model in order to expose the link between job demands and burnout, with this being done in several countries and for several professions (Bakker et al., 2003; Bakker et al., 2011: Febriani et al., 2023). Burnout is characterized by a feeling of emotional exhaustion (intense emotional fatigue), cynicism (a feeling of indifference toward ones work), and work inefficiency (a negative self-evaluation of work). In contrast, job resources are the physical, psychological, social, or organizational aspects of work that help to (i) achieve work goals; (ii) reduce job demands and the associated physiological and psychological costs; and/or (iii) stimulate personal growth, learning, and development. For example, it is the duty of a person to plan and carry out tasks with the support of his or her leadership and co-workers within an organization. Overall, job resources are associated with positive consequences for an individual and the

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organization, so researchers using the JD-R model are generally interested in the positive effects of job resources on improving engagement at work and reducing negative effects like burnout (Bakker et al., 2004. Bakker et al., 2011).

Predicting Well-being and Ill-being Through two Psychological Processes

The JD-R model uses two psychological processes to predict the well-being and ill-being of workers and explain the distinct effects of demands and resources on individuals (i.e., health-impairment process (HIP) and motivational process (MP)). A HIP occurs when demands are excessive (work overload) and resources are limited. More specifically, increased demands in a work environment drain a significant portion of a worker's energy, leading to negative consequences. Indeed, when jobs are poorly designed, such that the demands are hard or impossible to meet, there is an increasing risk of adverse health consequences for the workers (Bakker et al., 2003). An MP, meanwhile, occurs when resources are present in the work environment and have a motivational impact on workers. Indeed, job resources can be linked to different outcomes through workers' engagement, which is the counterpart to burnout. This relates to a positive, rewarding, and work-related affective state that is characterized by vigor, dedication, and absorption in ones work. Thus, previous researchers have studied several consequences of job resources, such as organizational engagement, loyalty to the organization, citizenship behaviors (Bakker et al., 2011), and the perception of occupational health (Innstrand et al., 2022).

The link between job resources and work engagement can be direct, or it can work indirectly through satisfying the fundamental psychological needs defined in the theory of self-determination (Deci and Ryan, 2000). This theory proposes three fundamental psychological needs: (i) a need for autonomy, which can be defined as a desire to be the source of action; (ii) a need for competence, which can be defined as a desire to interact effectively with the environment; and (iii) a need for social affiliation, which can be defined as a desire to have positive and reciprocal exchanges with others. The satisfaction of these needs – throughout the support by leadership in organizations – can bring many positive consequences for an individual on several levels, such as the physical (more energy), cognitive (greater concentration), and behavioral (better performance) levels (Jo et al., 2020; Hayavi et al., 2022; Blount & al., 2023; Fauziah et al., 2023).

Recent Evolution of the JD-R Model

Cavanaugh et al. (2000) distinguished two sources of stress, namely job challenges and job hindrances. Previous research assumes that the more stress a person experiences at work, the lower their job satisfaction will be and the greater their intention to quit will be, yet they fail to empirically prove any significant relationship between a measure of job stress and job satisfaction or intention to leave a job. Thus, the authors proposed two types of work stress: positive stress (eustress) resulting from a challenging request at work and negative stress (distress) resulting from a hindrance at work. A job challenge is therefore associated with potential benefits for the person, despite being potentially stressful. Hindrances, meanwhile, are factors in the work environment that create stress by interfering with a person's work without bringing benefits. In other words, the first type generates stress that can be overcome, while the other creates stress that simply persists. In addition, job challenges make it possible to achieve goals, and this can have beneficial effects for individuals. Conversely, hindrances simply create stress and prevent individuals from accomplishing their goals, so they have no beneficial effects for these people.

Hypothesis Development

To investigate the relationship between the JD-R model and the theoretical basic psychological needs, we integrated some recent nuances into each of these models, namely a distinction between the two job demand types (challenges and hindrances) of the JD-R model and notions of the frustration or satisfaction of psychological needs from self-determination theory. Moreover, based on the proposition of Van den Broeck et al. (2008), resources in a person's work environment are expected to contribute to satisfying that person's psychological needs and preventing their frustration. Conversely, hindrance demands are expected to be positively related to frustrating psychological needs and negatively related to satisfying them. Job challenges, meanwhile, are expected to be positively related to satisfying psychological needs. Indeed, such situations can galvanize workers into taking action to perform their work and meet these demands, and this can allow them to experience rewarding moments that help satisfy their basic psychological needs. In addition, we expect that satisfying a worker's psychological needs will positively relate to that person's work engagement and job performance and negatively relate to burnout and workplace deviance (Blount & al., 2023; Suhartono et al., 2023). Conversely, we would expect quite the opposite with any frustration of that person's psychological needs.

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Furthermore, several studies have found links between job resources and work engagement, burnout, and performance (Bakker et al., 2004), while others have found links between demands and burnout, performance, and workplace deviance. In general, the link between demand and work engagement is insignificant, but Van den Broeck et al. (2010) argued that combining the two types of demands together was masking their individual effects. Thus, separating the satisfaction and frustration of basic psychological needs could better explain the relationship between different characteristics of the work environment and the well-being and performance of women at work. In accordance with Van den Broeck et al. (2008), the satisfaction of basic psychological needs should reflect the motivational process proposed for the JD-R model, because resources stimulate the development of workers and satisfy their basic psychological needs. In addition, since job demands can be energy-intensive, and any frustration of basic psychological needs will likely lead to poor functioning among individuals, we speculate that the negative effect of job demand results from the frustration of basic psychological needs. Figure 1 presents the conceptual model by visually reflecting all its assumptions.

Hypothesis 1 (H1): Job resources (a) positively correlate with need satisfaction and (b) negatively correlate with need frustration.

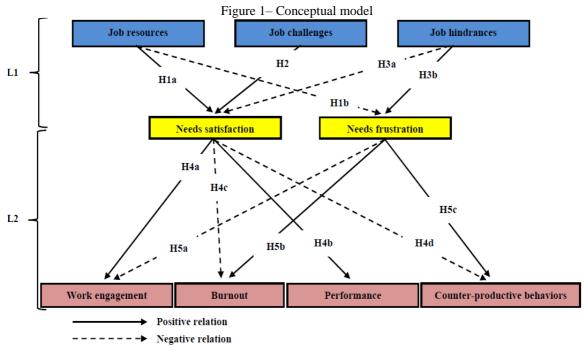
Hypothesis 2 (H2): Job challenges positively correlate with need satisfaction but do not correlate with need frustration.

Hypothesis 3 (H3): Job hindrances (a) negatively correlate with need satisfaction and (b) positively correlate with need frustration.

Hypothesis 4 (H4): The satisfaction of basic psychological needs positively correlates with (a) engagement at work and (b) performance, and it negatively correlates with (c) burnout and (d) workplace deviances.

Hypothesis 5 (H5): The frustration of basic psychological needs (a) negatively correlates with work engagement and (b) positively correlates with burnout and (c) workplace deviances. (d) The relationship between the frustration of psychological needs and performance is insignificant.

Hypothesis 6 (H6): The satisfaction or frustration of basic psychological needs mediates the relationships between work environment characteristics (i.e., resources and the two types of demands) and engagement at work, burnout, work performance, and workplace deviance.



Source: Prepared by the authors (2023).

MATERIALS AND METHODS

Participants and Procedure

Participants were initially recruited from women attending the "Women's Empowerment Conference: Saudi Women, Empowerment, & Excellence» on March 24, 2022. Some 112 women among those present responded directly with the paper-and-pencil version of the questionnaire, while an electronic version was given to female volunteers to distribute among their professional environments (i.e., to managers and colleagues). Two weeks later, a further 93 women submitted responses electronically.

To be eligible for the study, women needed to be aged 18 years or older and working, so unemployed and retired women were excluded. The participants were informed in the consent form that any data collected would remain confidential and that the study had secured the approval of the university's ethics committee. They were also told that this study included two measurement points and that they would be contacted a month later for the second part of the study, as well as that they could terminate their participation at any moment. For the second part of the survey, we sent an electronic link to a second questionnaire by e-mail and WhatsApp to all the participants. Our data collection was therefore conducted in two stages. First, the participants answered about the satisfaction and frustration of psychological needs and job demands/resources (the independent variables) and also sociodemographic and work-related factors (confounding variables). In the second questionnaire, the participants responded to

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questions about well-being and performance. To make it possible to match the questionnaires during data analysis, participant identification codes were allocated. Once the pairs of questionnaires had been matched, this code was deleted from the database.

Furthermore, the IP addresses of the participants were checked to ensure that none had answered more than once. The final sample comprised 205 women who had completed both the first and second questionnaires. Their ages varied from 19 to 56 years old with an average age of 30.7 years. Most lived in the KSA (96.6%), with the remainder being businesswomen who lived abroad. Almost four-fifths of them came from large Saudi cities (80.5%), with the remaining 19.5% living in sparsely urbanized regions or remote villages. Some 89.8% of the participants were fluent in business English, while 83% worked full time. On average, they had 7.2 years of experience and had been in their current positions for 5.1 years. In terms of sectors, 64.9% worked for the government, 25.4% worked for private for-profit organizations, and 9.7% were self-employed. Overall, the participants came from a diverse range of industries: education (28.8%), healthcare (23.9%), telecommunications (14.6%), services (13.2%), banking (9.3%), retail (5.9%), and various industries (4.3%). Most (54.1%) of these women had completed their primary and secondary education, 26.3% had finished high school, and 19.6% were university graduates.

Measurement of Job Demands

According to Cavanaugh et al. (2000), work requests are evaluated on a challenge—hindrance scale, thus making it possible to assess the several types of demands within a work environment (e.g., amount of work, urgency). Furthermore, Webster et al. (2010) proposed a scale to assess demands in the work environment but not their stressful effects on individuals. In their original version, Cavanaugh et al. (2000) assessed the stressful effect induced by different work characteristics using a response scale ranging from 1 (no stress) to 7 (a great deal of stress). However, using the term «stress» in the response scale could erroneously imply a correlation with stress measures. Thus, to avoid artificially amplifying any correlations between job challenges and hindrances, we asked participants to rate the extent to which they agreed with the sentiments in each of the statements. This set of 11 statements therefore looked to detect job challenges in the work environment. This included six statements along the lines of «I have a large number of projects and/or tasks to accomplish» (challenges) and give statements along the lines of «What is expected of me at work is not clear to me» (hindrances). The challenges were evaluated based on the average of the responses to the six statements, while

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the hindrances were similarly evaluated based on the responses to the five relevant statements. The responses were scored according to a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree). Numerous studies have shown this scale to have good internal consistency and test–retest reliability.

In this study, we found sufficient fidelity indices. The Cronbach's alphas (α_i) were .80 and .74 for job challenges and hindrances, respectively, which are similar to those obtained by Van den Broeck et al. (2010): Thus, $.73 \le \alpha_i \le .77$ and $.68 \le \alpha_i \le .83$ for job challenges and hindrances, respectively. Table 1 gives the means, standard deviations, and correlations between the variables, as well as the α_i if or each variable.

Measurement of Resources at Work

Since there exists no such measure in the managerial literature, we developed a scale based on five statements that represent five job resources frequently cited by researchers. These statements were based on the resources assessed by Bakker et al. (2003) and the definition of «resource» that was proposed by Bakker et al., (2011) for employment control («I have the freedom to decide how I do my work»); the notions of Brisson et al. (1998) for opportunities to use skills («In my job, I have to be creative») and for professional-development opportunities («My job gives me opportunities to learn new things»); and the notions of Bakker et al. (2003) for getting feedback about their leadership support ("I get enough information from my unit leader about my performance") and co-worker support («If necessary, I can ask one of my colleagues»). Thus, the job resources are evaluated as the average of the five identified statements. Finally, a seven-point Likert-type scale, ranging from 1 (completely disagree) to 7 (completely agree), was used, and α i of this scale is .72.

Table 1 – Means, standard deviations, Cronbach's alphas, and bivariate correlations for the study's variables											
Variables	M.	E.T.	1	2	3	4	5	6	7	8	9
1. Challenges	4.21	.91	(.80)								
2. Obstacles	3.59	1.11	.13	(.74)							
3. Resources	4.71	1.39	.40**	21**	(.72)						
4. Psychological needs satisfaction ^a	4.99	1.03	0.25**	41**	.47**	(.77)					
5. Psychological needs frustration ^a	3.11	1.27	.09	.67**	31**	66	(.88)				
-6- Engagement ^a	4.54	1.37	.31**	34**	.61**	.65**	47**	(.91)			
-7- Burnout ^a	3.07	1.31	13	.46**	43**	62**	63**	68**	(.89)		
-8- Performance ^a	5.33	.99	.32**	25**	.44**	.45**	36**	.49**	51**	(.82)	
-9- Workplace deviances ^a	2.06	1.03	28**	.22	26**	35**	.34**	39**	.54**	58**	(.72)

Notes: Means of all of each variable are on a scale from 1 to 7. Cronbach's Alpha (α _i) is plotted on the diagonal. All Means are calculated from the means of the subscales that make up each factor. *p<.01; ** p<.001.

Source: Prepared by the authors (2023).

Measurement of Satisfaction and Frustration of Psychological Needs at Work

To include statements about the frustration of psychological needs alongside the satisfaction statements under the same scale, we modified the Work-Related Basic Need Satisfaction (WRBNS) scale proposed by Van den Broeck et al. (2010). Thus, while retaining the meaning of the statements, we removed terms referring to the fact that the action takes place at work to avoid redundancy in the frustration scale. Furthermore, the psychological needs frustration scale began with the term «At work» with the various statements then listed thereafter. This format was retained because it is easy to understand and avoids repeating the phrase "at work" for each statement. For example, the statement "I have the feeling of being able to be myself." Furthermore, a seven-point Likert-type scale ranging from 1 (completely disagree) to 7 (completely agree) was used.

In addition, according to Girouard and Forest (2018), we did not use negatively formulated statements (i.e., those that must be reversed), so we used only positively formulated items to avoid any overlap between statements about psychological needs dissatisfaction and those about frustration. Thus, a total of nine statements out of 18 were retained. These had satisfactory loyalty indices, with α_i being equal to .80, .89, and .78 for autonomy, competence, and social affiliation needs, respectively.

The psychological needs satisfaction scale comprised three dimensions for the satisfaction of basic psychological needs, as identified by the theory of self-determination: autonomy (Three statements, e.g., «...I feel free to do my job as I think it is good to do it"), competence (Four statements, e.g., «...I am good at the things I have to do»), and social affiliation (Three statements, e.g., "...I feel like I'm part of a group»).

Finally, a seven-point Likert-type scale ranging from 1 (completely disagree) to 7 (completely agree) was again used. The α_i values were .78, .88, and .79 for autonomy, competence, and social affiliation, respectively. Finally, the means of each of the subscales were used as indicators of the latent construct representing the satisfaction of psychological needs.

To assess the frustration of psychological needs, we adopted the frustration scale of Bartholomew et al. (2011), as validated by Gillet et al. (2012). This scale was specifically developed to assess this fundamental variable, and it complements the inverted statements of the scale of Van den Broeck et al. (2010), which measures only need satisfaction. It comprises 12 statements within three dimensions that seek to identify any frustration of the needs for autonomy (Four statements, e.g., «...I feel forced to behave in a certain way»), competence (Four statements, e.g., «...there are situations in which everything is done to make me feel incompetent»), and social affiliation (Four statements, e.g., «...I think other people hate me").

Respondents had to answer the statements while thinking about their work situations. A Likert scale ranging from 1 (completely disagree) to 7 (completely agree) was again used. Gillet et al. (2012) validated this scale and reported satisfactory loyalty indices of (.67–.80), (.79–.82), and (.71–.80) for the frustration of the needs for autonomy, competence, and social affiliation, respectively. In this study, the α_i values were .78, .87 and .82, respectively. The means of each subscale were used as indicators of the latent construct representing the frustration of psychological needs.

Measurement of Work Engagement and Burnout

To measure work engagement, we used the scale of Schaufeli et al. (2006), which comprises nine statements over three dimensions, namely vigor (Three statements, e.g., «I am overflowing with energy for my work»), absorption (Three statements, e.g., «I am literally immersed in my work"), and dedication (Three statements, e.g., "I am proud of the work I do"). The statements were evaluated using a seven-point Likert scale ranging from 1 (never) to 7 (always/every day). Previous research has validated the three-dimensional structure and

reliability of this scale and reported satisfactory fidelity indices for nine samples from different countries ($\alpha_{(i_median)}$) are equal to .76, .87, and .79, respectively for the dimensions of vigor, dedication, and absorption) (Schaufeli et al., 2006). In the present work, $\alpha_{(i_median)}$ is used as .90 for vigor, .87 for absorption, and .89 for devotion. In the main analyses, the averages of each of the subscales (vigor, absorption, and dedication) were used as indicators of the latent construct representing work engagement.

Burnout was measured using the Shirom–Melamed Burnout Measure (Shirom & Melamed, 2006) which is composed of 14 statements measuring three dimensions of burnout with three subscales: emotional exhaustion (Three statements, e.g., «I feel unable to feel the needs of colleagues and/or clients"), cognitive fatigue (Five statements, e.g., "I have trouble concentrating"), and physical fatigue (Six statements, e.g., "I feel tired"). A Likert scale ranging from 1 (never) to 7 (every day) was used. Previous research has validated the three-dimensional structure and reliability of this scale. Indeed, Shirom and Melamed (2006) reported satisfactory loyalty indices (α _i equal to .84, .93, and .87 for the dimensions of burnout, cognitive fatigue, and physical fatigue, respectively). Our results yielded the values .90, .94, and .95 for each dimension, respectively. Finally, the means of each subscale were used as indicators of the latent construct representing burnout.

Measurement of Work Performance and Workplace Deviance

Work performance was assessed using the scale of Griffin et al. (2007), which measures three dimensions of performance—namely proficiency, adaptivity, and proactivity—at three different levels, namely individual, group, and organizational. Since our study focuses on individuals, only the nine statements relating to individual performance were retained. This scale comprises three subscales: proficiency (e.g., «I made sure that my tasks were done properly»), adaptability (e.g., «I did well with new ways of carrying out my main tasks»), and proactivity (e.g., «I made suggestions to improve my way of performing my main tasks"). A Likert scale ranging from 1 (never or almost never) to 7 (always or almost always) was used.

Previous research by Griffin et al. (2007) validated the three-dimensional structure of this scale and its reliability, reporting satisfactory loyalty indices (α_i equal to .87, .93, and .94, for the dimensions of proficiency, adaptivity, and proactivity, respectively). In our study, α_i was .94, .77, and .92 for each dimension, respectively. The means of each subscale were used as an indicator of the latent construct representing performance at work.

According to Bennett and Robinson (2000), workplace deviance can be evaluated using 19 statements to measure the extent to which a person exhibits behaviors that are harmful to the organization. This scale comprises two dimensions of workplace deviance, namely that toward other individuals at work (Seven statements, e.g., «I act rudely toward someone at work») and that toward the organization (Six statements, e.g., «I intentionally work slower than I am capable of»). A Likert scale ranging from 1 (never) to 7 (every day) was used. Six statements from the original 12 were excluded following the administration of the questionnaire and data analysis, because a large majority of participants (over 83%) indicated that they never exhibited such behaviors. Moreover, these statements constituted a problem during the exploratory factor analysis of the scale, either because they were not on the expected factor or because they had a significant loading (more than .40) on a secondary factor (factors that statements are not theoretically supposed to saturate). Stewart et al. (2009) also removed some statements from their analyses because they were problematic. In our study, α_i was .87 for each dimension. The averages of each of the subscales were used as indicators of the latent construct representing workplace deviance.

Data Analysis

The model was validated through four steps: (i) Preliminary analyses verified the postulates for subsequent analysis. Thus, the data collected were analyzed using the SPSS-20.0 software, the output was cleaned, and the basic postulates of the structural equation analyses were verified. (ii) Next came the descriptive analyses (means, standard deviations, correlations between variables) and analysis of the scales' reliability and common variances. (iii) Tests were carried out on the model using the structural equations, so the three models (M1, M2, M3) were empirically tested successively.

M1 considers that the links between the variables are determined according to the hypothesis that the characteristics of the job are the exogenous variables, while the satisfaction and frustration of needs and the measures of performance and well-being are the endogenous variables (i.e., mediators). M2 was created by deleting any insignificant links from M1. In order to perform an even more robust test of the proposed theoretical sequence, an alternative model (M3) was created by considering that psychological needs predict demands and resources. (iv) An analysis of indirect effects was performed to verify the mediating role of the satisfaction and frustration of psychological needs in the relationship between job demands/resources and work engagement, burnout, performance, and workplace deviance.

RESALTS AND DISCUSSION

The Z scores of the variables were calculated to check for outliers, and no participants were found to be univariate outliers (i.e., with data greater than three standard deviations). Next, the Mahalanobis distance (MD) was calculated to identify any multivariate outliers, but no participants presented data with a value exceeding the critical chi-square (χ 2) value at a significance level of p=1%. To this end, we used multivariate variance (MANOVA) to transform the sociodemographic data into dichotomous variables according to the most represented subgroup in relation to the others (Maitlo et al., 2020). No differences were identified between the women residing in developed areas and those living in other areas (F (20,203) = .382, p=.941), between women living in the KSA and those living abroad (F (20,203) = .561, p=.832), between women who were proficient in English and those who were not (F (20,203) = .902, p=.531), between women working in private for-profit companies and those working in government (F (20, 137) = .959, p=.473), and between those working full-time and those working part-time (F (20, 137) = .689, p=.718).

We tested nine regression models to estimate the relationships between this study's variables (job resources, the two types of demands, the satisfaction and frustration of psychological needs, work engagement, performance, burnout, and workplace deviance) and continuous sociodemographic variables (age, seniority in the organization, seniority in the position, and level of education).

These models were not significant for job challenges (F (4.179) = 1.447, p=.221), job hindrances (F (4.179) = 2.037, p=.091), job resources (F (4.179) = 1.228, p=.301), the satisfaction of needs (F (4.179) = 2.334, p=.058), the frustration of needs (F (4.179) = 1.669, p=.159), work engagement (F (4, 179) = 1.967, p=.102), and performance (F (4.179) = 1.580, p=.182). However, the model for burnout was significant (F (4.179) = 2.577, p=.039), with all the associations being insignificant other than that between burnout and job seniority (β =-.283, p=.026). The model for workplace deviance was also significant (F (4,179) = 2.566, p=.038), with all the associations being insignificant other than that between workplace deviance and age (β =-.288, p=.002). Thus, the more a woman becomes familiar with her position (i.e., greater seniority in her current position), the less likely she is to experience burnout. In addition, the older the woman is, the less chance she will exhibit workplace deviance. Consequently, the variables for the age of the participant and seniority in position would be included in the subsequent analyses to control for their effects.

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We created a global index for each measure with subscales. These indices were calculated after verifying that the different dimensions correlated with each other. These global scores were calculated based on the average standardized scores that were obtained for the various subscales. The α_i of each variable was calculated, and as expected, the different scales showed an acceptable internal consistency, since $\alpha_i \geq .70$ and $0.72 \leq \alpha_i \leq .91$.

We tested the proposed model through structural equations, with our analyses being performed using the Mplus-7.3 software. This helped determine the links between the variables based on the hypotheses. The fit of the model to the data was established using the $\chi 2$ test, which is sensitive to correlations and sample sizes. Consequently, we used the normed $\chi 2$, which indicates a reasonable fit for a model if its value is less than .3. In addition, the following fit criteria were also used: The root mean square error of approximation (RMSEA), where a value less than .05 indicates an excellent estimate, .08 indicates a good estimate, and .10 indicates an acceptable estimate. A 90% confidence interval for the RMSEA, whose upper limit does not exceed .10. The standardized root mean square residual (SRMR), whose value is less than .10. The comparative fit index (CFI) and Tucker Lewis index (TU), whose values are greater than .95 for an excellent estimate or .90 for an acceptable estimate.

Thus, M1 was tested to determine which links between variables existed according to the hypothesis that the exogenous variables of the model are the job characteristics, while the endogenous variables (mediators and dependent variables) are the satisfaction of needs, the frustration of needs, and the performance and well-being measures. We added a covariance link between the satisfaction and frustration of psychological needs, and we specified covariance links between the satisfaction and frustration of each respective need, because these variables share a common variance and construct (i.e., an assessment of the need for autonomy).

Table 2 gives the fit indices for M1, and they are unsatisfactory: χ2(df=191; N=199) =437.88), p=.001; RMSEA = .09 (.08-.10); CFI = .91. TLI = .87; SRMR = .08. However, some of the specified links are insignificant (between job seniority and burnout, between need satisfaction and workplace deviance, and between need frustration and work engagement). Thus, we removed the insignificant links from M1 and added, in accordance with the theory, other links relating to the indices of the modifications to test M2. Indeed, since our study focuses on the relationships between the JD-R model, psychological needs, well-being, and performance, we only considered links from the L1 level variables to those of the L2 level (see Fig. 2). Ultimately, we added two links: (i) a direct negative link between job challenges and

workplace deviance and (ii) a covariance link between satisfaction of the need for competence and performance.

Stajkov and Luthans (1998) demonstrated a strong link between self-efficacy and job performance. In other words, a person who believes he or she can perform his or her tasks adequately will be more likely to perform well than someone who doubts his or her abilities. Our results also confirm the work of Rodell and Judge (2009) in finding that job challenges are negatively related to workplace deviance (p=-.21). Indeed, this link can be explained by the resource preservation theory, which posits that job challenges represent opportunities for personal growth and the acquisition of personal resources (e.g., knowledge, skills). Therefore, when a person acquires new resources, he or she will normally want to protect these resources and acquire more.

Table 2 – Fit indices for the initial structural equation model and the modified models

Models	Fit indices					
	x^2	Df	CFI	TLI	RMSEA	SRMR
M1	437.88***	191	.91	.87	.09 (.0810)	.08
M2	336.78***	152	.91	.90	.08 (.0710)	.07
M3	409.11***	137	.89	.86	.10 (.0911)	.10
M4	437.88***	191	.91	.87	.09 (.0810)	.08

Notes: The variation interval of RMSEA is indicated in parentheses. *** p < .01; ** p < .05; * p < .10. Source: Prepared by the authors (2023).

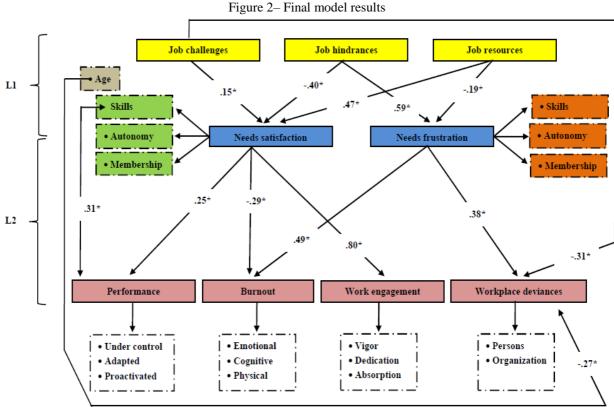
There is therefore less chance of this person engaging in workplace deviance, because that would put these resources at risk. Furthermore, a busy individual with a substantial workload and limited time to complete it (i.e., great job challenges) will be less inclined to exhibit any workplace deviance that would slow the accomplishment of this work, such as taking excessive breaks or ignoring requests from supervisors.

The fit indices of M2 are satisfactory, thus supporting the proposed model: $\chi 2(df=152; N=186) = 336.78)$, p=.001; RMSEA = .08 (.07-.10); CFI = .91. TLI = .90; SRMR = .07. Although the $\chi 2$ value is significant, the normed $\chi 2$ is 2.4, which is less than the critical value of 3.

M3, in which psychological needs predict demands and resources, was tested, but its adjustment indices were unsatisfactory: $\chi 2(df=137; N=181) = 409.11)$, p=.001; RMSEA = .10 (.09-.11); CFI = .89; TLI = .86; SRMR = .10. Consequently, M2 was found to best reflect the covariance matrix of the data and therefore be more likely to do the same with other samples. Environmental resources were positively related to need satisfaction (β =.47, p<.001) and negatively related to frustration of these needs (β =-.19, p<.001). Furthermore, job hindrances

were negatively related to need satisfaction (β =-.40, p<.001) and positively related to need frustration (β =.59, p<.001). Moreover, despite being environmental demands, job challenges were positively related to need satisfaction (β =.15, p<.001), which in turn was positively and significantly related to work performance (β =.25, p<.001) and work engagement (β =.80, p<.001), and it also had a negative relationship with burnout (β =-.29, p<.001).

The satisfaction of psychological needs positively reflects on work performance, but satisfaction of the need for competence has a bidirectional link (β =.3, p<.001). Thus, need satisfaction is important for performance, but satisfaction of the need for competence is especially important. The frustration of basic psychological needs was found to lead to workplace deviance (β =.38, p<.001) and burnout (β =.49, p<.001). In addition, the presence of job challenges prevents a person from adopting workplace deviance behaviors aimed at colleagues and the organization (β =-.31, p<.001). Finally, a woman's age was found to have a negative effect on her workplace deviance (β =-.27, p<.001).



Source: Prepared by the authors (2023).

To check for any moderating effects between the variables, we looked for indirect effects. For this, we adopted bootstrap resampling analysis, whereby we calculated several

bootstrap confidence intervals to test whether a moderating effect was significant. Table 3 gives the results of the resampling analysis and the significance of the indirect effects. The satisfaction of psychological needs moderates the relationship that the two types of demands and resources has with work engagement, performance, and burnout. Moreover, the satisfaction of competence needs mediates the relationships that the work environment (i.e., challenges, hindrances, and resources) has with performance. In addition, the frustration of psychological needs appears to mediate the relationship that job hindrances and resources has with burnout and workplace deviance. Thus, the more a woman is challenged in her work, or the more access she has to resources, the more she will be able to meet her needs for autonomy, competence, and social affiliation. The more these needs are satisfied, the more this woman will engage in her work efficiently while being less at risk of burnout.

Thus, the satisfaction of competence needs essentially helps people to perform their tasks efficiently, adapt to their environments, and show behaviors that go beyond simply executing their tasks. Conversely, when women perceive a great deal of job hindrance in their work environment, or when they have very limited access to resources, the more their psychological needs are at risk of being frustrated or violated. In these cases, they will be predisposed to burnout and workplace deviance.

Table 3 – Results of the bootstrap resampling analysis of indirect effects

Links	Standardized β	95% B.C.I.		p-value
		Lower	Upper	
Challenges→Needs satisfaction→Performance	.81	.21	.18	.23
Challenges→Needs satisfaction→Engagement	.11	.29	.25	.11
Challenges→Needs satisfaction→Burnout	07	16	08	.039
Obstacles→Needs satisfaction→Performance	19	29	11	.001
Obstacles→Needs satisfaction→Engagement	33	47	26	.001
Obstacles→Needs satisfaction→Burnout	.13	.07	.22	.002
Resources→Needs satisfaction→Performance	.23	.17	.32	.002
Resources→Needs satisfaction→Engagement	.40	.27	.49	.001
Resources→Needs satisfaction→Burnout	14	25	07	.002
Obstacles→ Needs frustration→Workplace deviance	.25	.19	.36	.001
Obstacles→Needs frustration→Burnout	.33	.24	.43	.001
Resources→Needs frustration→Workplace deviance	08	18	05	.002
Resources→Needs frustration→Burnout	13	24	05	.003

Note: B.C.I.= Bootstrap confidence interval. Source: Prepared by the authors (2023).

Table 4 summarizes the results of the hypothesis testing by objective. Thus, the two types of demands and resources are not related in the same way to the satisfaction and frustration of psychological needs. Indeed, there is a positive link between job challenges and the satisfaction of psychological needs. Therefore, when women perceive their work to be

challenging, they feel increasingly autonomous and competent and are more likely to have good relationships with colleagues.

Table 4 – Hypotheses and the empirical results

Objectif		Hypothese	Results
Objectif 1	1	Resources at work will be positively related to need satisfaction (a) and negatively supported to need frustration (b).	H1a and H1b are empirically supported
	2	The challenges at work will be positively related to the satisfaction of needs.	H2 is empirically supported
	3	Obstacles to work are negatively related to needs satisfaction (a) and positively to needs frustration (b).	H3a and H3b are empirically supported.
Objectif 2	4	Satisfaction of basic psychological needs is positively related to work engagement (a) and performance (b), and negatively to burnout (c) and workplace deviances (d)	H4a, H4b and H4c are empirically supported. H4d is not supported.
	5	Frustration of basic psychological needs is negatively related to job engagement (a), and positively to burnout (b) and workplace deviances (c).	H5b and H54c are empirically supported. H5a is not supported.
Objectif 3	6	Satisfaction and frustration of women's basic psychological needs act as mediating variables in the relationship between work environment characteristics and work engagement, burnout, job performance, and workplace deviances.	Partially supported. The relationship between challenges and workplace deviance is partially mediated by needs satisfaction. The relationship between challenges, needs satisfaction and performance is not significant.

Source: Prepared by the authors (2023).

Job hindrances, meanwhile, are negatively related to the satisfaction of psychological needs and positively related to their frustration. Thus, the more a woman perceives hindrances in her working environment, the less feeling of autonomy and competence she has and the less likely she will be to have good relations with colleagues. In contrast, the more a woman perceives that she has access to resources in her work environment, the more she will feel autonomous, competent, and able to have quality relationships.

Furthermore, the results show that the more a woman perceives that her psychological needs are being satisfied, the more she engages with her work efficiently with less chance of burnout. In addition, when a woman feels autonomous and competent and able to have meaningful relationships with her colleagues, the more this woman will devote herself to her work, getting vigorously absorbed in whatever she does. Overall, this causes her to work more efficiently, so satisfying the need for competence has a major effect. When women feel more competent and able to perform their jobs effectively, they are more adaptable and proactive. Moreover, being efficient in their work also allows women to feel more competent. The satisfaction of psychological needs also helps to protect women from burnout. There is no

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significant link between the satisfaction of psychological needs and workplace deviance, but the more these needs are frustrated at work for women, the more likely it is that they will experience burnout or show workplace deviance. Finally, we found no significant link between the frustration of psychological needs and the work engagement of women.

Women's psychological needs therefore moderate the relationships that the work environment has with well-being and performance, although this role is weak in the case of challenging demands, because it seems that being challenged in a job causes women to suffer fewer negative effects.

Three theoretical implications of these findings are significant: First, this work supports the JD-R model literature (Bakker et al., 2011). Indeed, we confirmed that the distinction between the two types of demand, as proposed by Van den Broeck et al. (2010), is relevant because it allows a better understanding of this model. When making this distinction, job challenges and hindrances do not have the same consequences, despite some researchers still considering them together. More specifically, job challenges are perceived as energizing demands that support optimal performance, while job hindrances are more exhausting demands that do not yield a corresponding positive experience. Second, this study contributes to selfdetermination theory. Indeed, while Deci and Ryan (2000) showed the distinction between satisfying the needs for autonomy, competence, and social affiliation, as well as their frustration, few studies have empirically focused on this phenomenon (Gillet et al., 2012). Third, this study confirms that the satisfaction or frustration of basic psychological needs are predicted by different antecedents and lead to different consequences. It adds to the research about the distinct roles that the three psychological needs play, because most previous studies have only used a one-dimensional measure of satisfaction, thus ignoring the individual roles played by each psychological need. Fourth, the findings contribute to our understanding of the mediating role played by psychological need satisfaction and frustration in the relationships that job demands and resources have with performance and well-being. Indeed, we have demonstrated that the satisfaction and frustration of psychological needs provide a mechanism for explaining, in large part, how job resources, hindrances, and challenges can lead to behavioral, cognitive, and emotional consequences that are both positive and negative (Febriani et al., 2023).

Our findings have three practical implications. First, leadership within an organization must provide a work environment in which women can tackle challenges and access sufficient resources to satisfy their basic psychological needs. Indeed, job challenges and resources

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enhance the experience of working women and help them to perform more efficiently with better psychological health. Leadership within organizations therefore have an interest in increasing the presence, or the perception, of these elements in the working environment. In addition, care must be taken to reduce, as much as possible, the presence and perception of job hindrances, because they often increase the likelihood of negative experiences like burnout and unhelpful behaviors like workplace deviance. Second, since the frustration and satisfaction of psychological needs do not have the same consequences, it is important to pay attention to these two variables. When considered simultaneously, leaders within organizations should reduce negative experiences that frustrate needs and promote positive experiences that help satisfy these needs, thus covering the entire spectrum of outcomes. In contrast, if these two variables are considered in isolation, the reduction in frustration or the increase in satisfaction alone will not be sufficient for an organization to maintain performance and well-being among its employees. Third, our study will serve human resource managers and psychologists in integrating self-determination theory at work with solid and credible scientific support. Indeed, this study increases our understanding of the mechanisms that promote performance and wellbeing and reduce workplace deviance and burnout. In this sense, our results may help leaders and managers to better consider the characteristics of women's working environments, so they will better satisfy their basic psychological needs and avoid frustrating them.

CONCLUSION

This study makes original and significant contributions to work and organizational psychology and human resource management, because it highlights the nuances between job challenges and hindrances and distinguishes between satisfying and frustrating the fundamental psychological needs of women at work. It also contributes to our knowledge of the effects of satisfying and frustrating women's basic psychological needs by focusing on rarely studied additional consequences in a work context (work performance) by combining them with variables that shed light on both the positive and negative sides of the experience (i.e., work engagement and burnout) and performance (i.e., performance and workplace deviance). Indeed, if a woman is exposed to job challenges and has access to job resources, it provides opportunities to satisfy her psychological needs, which in turn will allow her to experience a greater level of work engagement, perform more effectively, and avoid burning out. In addition, an organization should minimize any job hindrances, because these hinder any satisfaction of women's psychological needs and further frustrate them. Finally, it is desirable to keep any

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frustration of these psychological needs at the lowest possible level, and this can be done by minimizing job hindrances and increasing access to resources. This will avoid many unfavorable consequences for individuals and the organization, such as burnout and workplace deviance.

This study is based solely on a correlational estimate that allows us to test hypotheses, but we were unable to establish the causality of the relationships. Despite this, the alternative model we tested appeared to be less satisfactory than the initial model. Thus, it is likely that the relationships between demands, resources, and psychological needs actually go in the expected direction, but this could be affirmed using an experimental design in which the variables were manipulated. In addition, we used self-reported data, which is vulnerable to the respondents' social desirability, so their answers may have been influenced by wanting to "look good." Third, although the sample was diverse in several aspects (e.g., area of residence, sector of work, etc.), it did not represent all female workers in Saudi Arabia. Consequently, our results open up several avenues for future research. First, to test the causality of the relationships, a future study should reproduce the results of this study with an experimental design. It would therefore be possible to ask participants to read a text that represents one of the three types of environments to achieve a priming. It would also be helpful to verify the effects found in this study over a longer period, because certain effects may take longer to manifest. It may also be helpful for women's spouses to assess possible burnout, line managers or clients to assess performance, and colleagues to assess work engagement. We therefore assessed how the satisfaction or frustration of women's psychological needs influences their performance and well-being within their workplace, both in terms of positive effects (good work performance, work engagement) and negative effects (workplace deviance, burnout). Finally, while this study examined the influence of the satisfaction or frustration of women's psychological needs on their performance and well-being within their workplace, the study does not address the direct role of leadership in satisfying of women's psychological needs for positive outcomes and achievement of organizational goals. Therefore, this study draws attention of future research to the need for measuring and addressing the direct effect of leadership, particularly transformational leadership on women's psychological needs and so provide a richer understanding of the area and add credence to the findings of the study.

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