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Influence of Engagement on Job Satisfaction Among Workers in a Metalworking Company in Lima, Peru

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ABSTRACT

Companies should prioritize occupational health and safety to achieve high performance levels. This research study aimed to assess the influence of engagement on job satisfaction among workers in a metalworking company in Lima, Peru. The Utrecht Work Engagement Scale (UWES-9) and the Job Satisfaction Questionnaire S10/12 were used to gather data. Additionally, information on socio-labor variables was also collected. A non-experimental, cross-sectional design with explanatory scope and a quantitative approach was applied to a census sample of 74 workers. A PLS-SEM model was used for analysis. The findings indicate that: 1) the UWES-9 scale is reliable and valid for measuring the engagement construct in the metalworking sector, 2) the S10/12 scale is reliable and valid for measuring the job satisfaction construct in the metalworking sector, and 3) engagement has a positive and significant influence on job satisfaction among workers in metalworking companies.

Keywords: engagement, job satisfaction, metalworking company, vigor, dedication, absorption.

INTRODUCTION

When viewing an organization as a dynamic entity, assessing the conditions under which its members use their talents or skills to meet business goals is essential. These individuals constantly face challenges related to increasing productivity and competitiveness standards to secure better and greater outcomes. From this perspective, talent management becomes fundamental to achieving an ideal state. It must delve into the factors that influence organizational behavior, including physical and mental health, job satisfaction, and leadership, among other relevant variables that impact business results. To achieve these goals, research in human resources primarily focuses on the occupational health of employees, striving to create healthy work environments that enable staff to effectively use their talents and attain high levels of performance, while enhancing their satisfaction and well-being (Kwon & Kim, 2020).

Moreover, significant political, economic, social, and technological changes in recent decades have greatly impacted employees and their work environment. These changes have had favorable and unfavorable consequences for the workforce and the organization. For instance, social changes include new

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legal regulations governing the workplace (Judge et al., 2017), while the economic landscape has seen the industrial sector, including metalworking, experiencing a cumulative decline of 6.6% over the past three years. This decline has put considerable psychological pressure on workers due to the looming threat of layoffs.

In light of this, top management should regard employees as their most valuable asset and prioritize the transition towards a “healthy organization”, characterized by healthy employees—those passionate about their job—and healthy results or services. In this context, specialized literature has identified several issues related to the mental health of workers that negatively and significantly impact job satisfaction. This concern forms the basis of the research advocated in the present study.

Engagement, one of the variables examined in this research study, refers to a state of mind that enhances worker performance. It is widely acknowledged in the specialized literature as one of the primary factors contributing to job satisfaction (Mascarenhas et al., 2022; Cortés-Denia et al., 2023). This approach is widely accepted, yet there is some controversy surrounding this topic. Some researchers argue that engagement is a consequence of job satisfaction (Ren et al., 2022). In this research, engagement is treated as a predictor of job satisfaction because it represents the dominant perspective in the current literature. Therefore, this study aims to analyze the influence of engagement on job satisfaction among workers in a metalworking company located in Lima, Peru. This analysis serves as a preliminary step to design an organizational development plan aimed at achieving outstanding performance and, consequently, fulfilling the company’s mission. The most significant contributions of this research include:

1. An assessment of the levels of satisfaction and engagement among the personnel of a medium-sized company within the Peruvian metalworking sector. Organizations striving to improve their competitiveness recognize the importance of safeguarding the emotional, mental, and physical integrity of their workers.
2. Being the first psychometric validation of the UWES-9 scale among Peruvian workers in the metalworking sector, with limited prior reports in other business sectors within the country and across Latin America.
3. A thorough psychometric evaluation of a job satisfaction scale for skilled manual workers, who represent a segment that has been little studied from the perspective of their well-being.
4. A contribution to the specialized literature on the relationship between engagement and job satisfaction from the perspective of engagement as a predictor, particularly relevant in the metalworking industry. This study uses advanced statistical techniques, notably a multivariate approach known as the Partial Least Squares Structural Equation Modeling (PLS-SEM).

Job Satisfaction (JSAT)

Job satisfaction refers to an emotional state characterized by satisfaction and positive feelings that arise from an individual’s self-assessment of their work (Judge et al., 2017). It encompasses positive feelings about work that stem from a personal evaluation of organizational characteristics and experiences. As an attitude, job satisfaction is rooted in individuals’ self-acquired beliefs and values regarding their work (Gopinath & Kalpana, 2020).

Focusing on the occupational health of workers is crucial, as it is widely acknowledged that employees play a primary role in the success of the organization. However, companies often fail to address workers’ needs, which leads to low job satisfaction and various detrimental consequences, including talent retention issues, job stress, and high turnover rates, among many others (Dorta-Afonso et al., 2023).

There are several instruments available to measure job satisfaction, one of which is the Job Satisfaction Questionnaire S10/12 (Meliá & Peiró, 1989). This instrument is a condensed version of the original S4/82 (82 items) and the S20/23 version (23 items). Despite its shortened length of 12 items, the S10/12 maintains a high reliability, demonstrated by a Cronbach’s alpha value of 0.88, and its validity levels surpass those of the original scale.

The S10/12 assesses three factors or dimensions: supervisory satisfaction (SUS), physical work environment satisfaction (WES), and employee benefit satisfaction (EBS). This instrument allows consultants and researchers to conduct efficient and concise assessments of job satisfaction in various organizational contexts, considering motivational and time-related constraints that may affect their work without compromising the quality of the measurement (Meliá & Peiró, 1989).

Engagement (ENG)

An important scientific trend highlights that there is no direct translation of the term *engagement* in Spanish. As a result, some researchers choose not to translate it (Spontón et al., 2018), while others

opt for Spanish terms like *compromiso*, among others. According to Schaufeli et al. (2002), work engagement is conceived as [...] "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 74). Among these three components, vigor and dedication represent the "heart of engagement", whereas absorption is more of an effect of engagement rather than a core component (Salanova et al., 2000).

Engagement is closely related to several work-related variables, including job satisfaction, high work performance, reduced turnover and absenteeism, improved organizational climate, customer satisfaction, and positive evaluations of employee skills and service climate. Therefore, it is a strong predictor of work performance and fosters increased customer loyalty and retention, ultimately enhancing the company's financial performance. Additionally, engagement serves as a good predictor of important results at the individual, team, and organizational levels.

In this context, engaged workers tend to demonstrate higher achievement standards in the accomplishment of tasks (Rodríguez-Sánchez et al., 2020). Their openness to new experiences makes them more creative and inclined toward innovation and entrepreneurship. Moreover, they are more likely to offer mutual support. At the team level, research has shown that engagement positively correlates with group performance (Schreuder, et al., 2020). A relatively new term in this field is *engaging leadership*, which focuses on promoting engagement within work teams.

Hypothesis

Several researchers have demonstrated a positive and significant relationship between engagement and job satisfaction. For instance, Côté et al. (2021) confirmed this relationship in a study involving a sample of 289 health sector workers in Belgium, while Gu et al. (2021) found the same results in a sample of 638 hospital doctors in a province of China. Similar results were found in the education sector by Ren et al. (2022) among 530 elementary and high school teachers in a province of China, and Pepe et al. (2021) among 380 elementary and high school teachers in Palestine. Additionally, Cortés-Denia et al. (2023) proved that engagement positively influences the dimensions "workplace environment satisfaction" (WES) and "supervisory satisfaction" (SUS), but does not impact "employee benefit satisfaction" (EBS), based on their study

of 1029 employees from public and private organizations across various provinces of Spain. Likewise, Sinval and Marôco (2020) verified the influence of engagement on job satisfaction in multi-occupational samples in Brazil (n = 599) and Portugal (n = 572), while Mascarenhas et al. (2022) studied a sample of 171 professors and staff at a public university in Portugal. Based on the literature review and adopting the causal approach used by several authors (Côté et al., 2021; Sinval & Marôco, 2020; Mascarenhas et al., 2022; Cortés-Denia et al., 2023) the following hypothesis is proposed:

H₁: Engagement has a positive and significant impact on job satisfaction among workers in metalworking companies.

METHODOLOGY

A non-experimental, cross-sectional design with explanatory scope and a quantitative approach was applied in this research study. The research involved all 74 workers (census sample) of a metalworking company in Lima, Peru. The statistical power, estimated with the Gamma-exponential technique, an error of 0.05 and a minimum power of 0.80, indicated a minimum sample size of 56 individuals, which was exceeded in this census sample. The socio-labor characteristics of the sample (mean and standard deviation) are as follows: age in years (37.00; 10.71), seniority in years (5.66; 4.48), and working experience in other companies in years (2.96; 4.39). Additionally, 73% of the sample participants are men, and 64.9% of the families have one or no children.

To measure engagement, the study utilized the Utrecht Work Engagement Scale (UWES-9) by Schaufeli and Bakker (2011), which employs a response format ranging from 0 "never" to 6 "always". Given that this scale was specifically designed for workers, it underwent validation through expert judgment and pilot testing. This process led to the simplification of certain terms to enhance clarity for the following items: 8. "I am deep (immersed) in my work" (Abs2) and 9. "I roll with my work (am guided by my work)" (Abs3), both of which pertain to the absorption dimension (ABS).

To gather information on job satisfaction, the Job Satisfaction Questionnaire S10/12 developed by Meliá and Peiró (1989) was used. This questionnaire uses a 7-point Likert scale, with response options as follows: (1) very dissatisfied, (2) somewhat dissatisfied, (3) neutral, (4) indifferent, (5) somewhat satisfied, (6) quite satisfied, and (7) very

satisfied. In addition, the questionnaire gathered information related to the socio-labor variables described above.

The questionnaires were administered directly to the metalworking company workers, who completed them anonymously in an estimated time of no more than 40 minutes at their work sites. Descriptive statistics were processed using SPSS version 27, and WarpPLs software was employed to estimate the PLS-SEM model. A two-stage procedure was applied to address the second-order constructs.

RESULTS

The descriptive statistics, including the correlations between the dimensions of engagement (ENG) and job satisfaction (JSAT) variables, are presented in Table 1. For the engagement variable, the absorption dimension scored the highest, while for job satisfaction, the highest score was for supervisory satisfaction. However, both variables exhibited low variability. Workers demonstrated a high level of engagement, with averages ranging from 4.67 to 5.50 (Schaufeli and Bakker, 2011, p. 33). Similarly, satisfaction levels were high, with averages ranging from 4.61 to 5.80 (Palomo-Vélez et al., 2015).

Assessment of the Measurement Model

The assessment of the dimensions of ENG and JSAT, representing the first-order constructs, is detailed in Table 2. All dimensions exhibit strong item reliability, as their factor loadings (λ) are statistically significant ($p < 0.01$). Additionally, these dimensions demonstrate two types of validity: discriminant and

convergent. This is evidenced by the average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha (α) values, which meet the relevant thresholds ($AVE \geq 0.5$; $CR \geq 0.6$; $\alpha \geq 0.6$), as outlined by Hair et al. (2021).

Next, the assessment of the second-order constructs, ENG, and JSAT, is provided in Table 3. The findings indicate that these constructs also exhibit reliable dimensions, as all associated factor loadings (λ) are statistically significant ($p < 0.01$). Like the first-order constructs, the second-order constructs also exhibit both discriminant and convergent validity, with all indicators meeting the established criteria ($AVE \geq 0.5$; $CR \geq 0.6$; $\alpha \geq 0.6$).

Assessment of the Structural Model Relating Engagement to Job Satisfaction

In assessing the structural model as a whole (Table 4), the coefficient of determination (R^2) for the endogenous JSAT construct was estimated at 0.284 ($p = 0.002$). This value indicates a weak level, as it falls between 0.25 and 0.50 (Hair et al., 2021). Conversely, the goodness-of-fit index (GoF) was found to be 0.481, which is considered high since it exceeds the threshold of 0.36 (Aybek & Karakaş, 2022).

The results shown in Table 4 confirm the study hypothesis. It can therefore be asserted that the ENG construct exerts a significant and positive influence on job satisfaction. This influence is particularly relevant, as the path (or beta) coefficient reveals a strong relationship with a value greater than 0.30, and the result is highly significant ($p < 0.001$).

Table 1. Descriptive Data and Correlations of the Dimensions of the Variables.

Dimensions/Variables	\bar{X}	σ	1	2	3	4	5	6
1 Dedication (DED)	5.00	0.91	1.00	0.77	0.76	0.37	0.49	0.38
2 Absorption (ABS)	5.19	0.88		1.00	0.67	0.33	0.53	0.33
3 Engagement (ENG)	4.97	0.87			1.00	0.46	0.49	0.38
4 Workplace Environment Satisfaction (WES)	5.47	1.11				1.00	0.72	0.72
5 Supervisory Satisfaction (SUS)	5.57	1.13					1.00	0.69
6 Employee Benefit Satisfaction (EBS)	5.49	1.18						1.00
ENG	5.05	0.80						
JSAT	5.51	1.02						

\bar{X} : mean

σ : standard deviation

Source: Prepared by the authors.

Table 2. *First-Order Construct Measurement Model.*

Construct	Indicator	Factor Loading (λ)	p	AVE	CR	α
VIG	Vig1 \leftarrow VIG	0.892	< 0.001	0.765	0.907	0.846
	Vig2 \leftarrow VIG	0.908	< 0.001			
	Vig3 \leftarrow VIG	0.821	< 0.001			
DED	Ded1 \leftarrow DED	0.861	< 0.001	0.797	0.922	0.872
	Ded2 \leftarrow DED	0.906	< 0.001			
	Ded3 \leftarrow DED	0.911	< 0.001			
ABS	Abs1 \leftarrow ABS	0.839	< 0.001	0.686	0.867	0.769
	Abs3 \leftarrow ABS	0.770	< 0.001			
	Abs3 \leftarrow ABS	0.872	< 0.001			
WES	Wes1 \leftarrow WES	0.752	< 0.001	0.684	0.896	0.843
	Wes2 \leftarrow WES	0.878	< 0.001			
	Wes3 \leftarrow WES	0.904	< 0.001			
	Wes4 \leftarrow WES	0.763	< 0.001			
SUS	Sus1 \leftarrow SUS	0.913	< 0.001	0.754	0.948	0.934
	Sus1 \leftarrow SUS	0.829	< 0.001			
	Sus1 \leftarrow SUS	0.858	< 0.001			
	Sus1 \leftarrow SUS	0.858	< 0.001			
	Sus1 \leftarrow SUS	0.825	< 0.001			
	Sus1 \leftarrow SUS	0.922	< 0.001			
EBS	Ebs1 \leftarrow EBS	0.933	< 0.001	0.871	0.931	0.852
	Ebs1 \leftarrow EBS	0.933	< 0.001			

Source: Prepared by the authors.

Table 3. *Second-Order Construct Measurement Model.*

Construct	Indicator	Factor Loading (λ)	p	AVE	CR	α
ENG	VIG \leftarrow ENG	0.933	< 0.001	0.832	0.937	0.899
	DED \leftarrow ENG	0.899	< 0.001			
	ABS \leftarrow ENG	0.904	< 0.001			
JSAT	WES \leftarrow JSAT	0.902	< 0.001	0.802	0.924	0.877
	SUS \leftarrow JSAT	0.894	< 0.001			
	EBS \leftarrow JSAT	0.891	< 0.001			

Source: Prepared by the authors.

Table 4. *Hypothesis Testing for the Relationship Between Engagement and Job Satisfaction.*

Hypothesis	Relationship	β	Sign	p	Result
H ₁	ENG \rightarrow JSAT	0.533	+	< 0.001	Accepted

$R^2 = 0.284$ ($p = 0.002$)

GoF= 0.481

Source: Prepared by the authors.

DISCUSSION

Both the reliability and validity of the constructs engagement (ENG) and job satisfaction (JSAT) were tested, confirming findings from previous studies (Ren et al., 2022; Ariño et al., 2022; Cortés-Denia et al., 2023). The hypothesis testing demonstrates that engagement positively and significantly influences the job satisfaction of workers in the metalworking company under study. This result aligns with research conducted by various authors in different

organizational contexts (Côté et al., 2021; Sinval & Marôco, 2020; Mascarenhas et al., 2022; Cortés-Denia et al., 2023). It is important to note that some researchers have established this relationship from a different perspective, where job satisfaction is a predictor of engagement (Pepe et al., 2021; Ren et al., 2022). However, this alternative approach was not adopted in this research, as the primary focus follows the mainstream view promoted and led by Bakker (2022), the author with the largest number of publications in Scopus. Moreover, the idea of

engagement as a predictor of job satisfaction is a fundamental assumption of the new concept of sustainable employment (Gürbüz et al., 2023).

These results suggest that workers who exhibit high levels of vigor, dedication, and absorption tend to be more engaged with their company, as they perceive themselves achieving meaningful goals. Consequently, they experience a motivational emotional state that enhances their performance and job satisfaction (Gürbüz et al., 2023). Therefore, organizations should foster work environments that improve engagement to increase job satisfaction and achieve better business outcomes (Dorta-Afonso et al., 2023).

CONCLUSIONS

The UWES-9 scale demonstrates reliability and validity in measuring the engagement construct in the metalworking sector.

The S10/12 scale demonstrates reliability and validity in measuring the job satisfaction construct in the metalworking sector.

Engagement positively and significantly influences job satisfaction among employees of the metalworking company under study.

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Authors' contribution

Amalia Rosario Castañeda Flores (first author): Conceptualization, data curation, investigation, and writing (original draft).

José Ovidio Flores Gutiérrez (co-author): Investigation, formal analysis, and writing.

Carlos Augusto Shigyo Ortiz (co-author): Investigation, methodology, writing (review & editing), and validation.

Juan Manuel Cevallos (co-author): Investigation, methodology, and writing (review & editing).