JOURNAL OF INTERNATIONAL CRISIS AND RISK COMMUNICATION RESEARCH
ISSN: 2576-0017
2024, VOL 7, NO S5

# Vigor and Absorption in Employees: Exploring Their Relationship in the Organizational Sphere

**Hernán Javier Guzmán Murillo[1],José Marcelo Torres Ortega[2],William Niebles[3]**

*1.Doctor en Ciencias de la Educación,Universidad de Sucre,hernan.guzman@unisucre.edu.co ,https://orcid.org/0000-0002-6757-4549*
*2.Doctor en Economía y Empresas,Doctor en Estudios Políticos*
*Universidad de Sucre,jose.torres@unisucre.edu.co*
*https://orcid.org/0000-0001-8107-8763*
*3.Doctor en Ciencias Gerenciales,Universidad de Sucre*
*williamniebles@yahoo.com.mx ,https://orcid.org/0000-0001-9411-4583*

**Abstract**
This study analyzes the relationship between Vigor and Absorption in the organizational environment using a simple linear regression model. The research is based on theories on work engagement, organizational energy, and well-being at work, with the aim of evaluating how absorption in work activities can influence employee vigor. It is hypothesized that increased absorption is associated with greater vigor at work, suggesting that workers who are highly immersed in their tasks tend to experience higher levels of energy and persistence in their performance.
To evaluate this relationship, a quantitative design based on econometric techniques was used. The estimated model shows that the coefficient of the Absorption variable is positive and highly significant ($p<0.001p < 0.001$), suggesting that as employees experience greater absorption in their tasks, their level of vigor also increases. In addition, the model meets the fundamental assumptions of regression, including tests of specification, linearity, and absence of autocorrelation. The conclusions highlight that absorption at work is a relevant predictor of vigor, which has implications both in talent management and in the design of strategies to improve organizational engagement. The evidence obtained suggests that promoting full concentration at work could have a positive impact on employees' energy and motivation. It is recommended that future research expand the analysis by incorporating other variables of work engagement.
**Keywords:** Vigor, absorption, work commitment, organizational energy, well-being at work.

## Introduction

The study of well-being and performance in the workplace has acquired great relevance in the organizational literature, given its impact on employee productivity and satisfaction (Bakker & Demerouti, 2007). Within this field, work engagement is a key construct that describes the positive state of involvement and energy at work (Schaufeli, Salanova, González-Romá & Bakker, 2002). Two fundamental dimensions of engagement are vigor, understood as the level of energy and endurance at work, and absorption, defined as total concentration on work tasks.
Research has shown that employees with high levels of vigor tend to show greater persistence and enthusiasm in their roles, while those with greater absorption experience a deep immersion in their activities, allowing them to work more efficiently (Salanova, Llorens, & Schaufeli, 2011). However, the relationship between these two components has not been widely explored in specific populations, raising the need to understand how absorption can predict vigor in employees.
From a practical perspective, understanding this relationship is essential to design strategies that promote employee engagement, improving their performance and well-

being. In this context, this study seeks to answer the following research question: To what extent does absorption at work influence employee vigor? To this end, a quantitative approach based on simple linear regression is used to determine the relationship between both variables in a sample of workers.

**Theoretical Approaches**

The analysis of the relationship between vigor and absorption is based on various theories of organizational behavior and work psychology, which explain how states of high immersion in tasks can generate high levels of energy, endurance and persistence in performance. The relationship between these variables is key in the study of work engagement, since vigor reflects an employee's energy and willingness to face their work with enthusiasm, while absorption refers to the level of concentration and fullness with which tasks are executed. Different theoretical models have explored this interaction, highlighting the role of labor resources, attention regulation, and energy conservation in the engagement process.

**Work Engagement Theory (Schaufeli et al., 2002)**

Work engagement is a positive state of mind characterized by vigor, dedication, and absorption. According to Schaufeli et al. (2002), employees with high levels of engagement not only experience greater intrinsic motivation, but also show better results in terms of performance, job satisfaction, and organizational commitment. The theory posits that vigor and absorption are interconnected: when an employee is fully immersed in their work (*absorption*), they are more likely to experience high levels of energy and endurance (*vigor*).

This bidirectional relationship suggests that engagement is not a static state, but a dynamic process in which the level of absorption influences the energy available for the execution of tasks, and vice versa. In this sense, absorption allows employees to engage in complex tasks without perceiving them as exhausting, since high concentration facilitates the optimization of cognitive and physical resources. Studies have confirmed that highly engaged employees tend to experience a more efficient workflow, which increases their persistence and effort in fulfilling their job responsibilities.

Model of Labor Demands and Resources (Bakker & Demerouti, 2007)

The Work Demands and Resources Model (JD-R) argues that work engagement is the result of a balance between the demands of the job and the resources available to meet those demands. According to Bakker and Demerouti (2007), work resources, such as autonomy, organizational support, clarity in tasks, and effective feedback, can generate states of engagement, increasing both absorption and vigor.

When employees have structured environments that favor full concentration on their tasks (high absorption), they can develop greater vigor in daily performance, since the availability of resources allows them to optimize their energy and avoid fatigue. This model also highlights that positive feedback and organizational recognition enhance the relationship between absorption and vigor, by providing continuous reinforcement that motivates employees to maintain their commitment and effort at work.

From this perspective, engagement is not only dependent on individual factors, but is influenced by the conditions of the work environment, which implies that organizations can design strategies to improve absorption and, consequently, strengthen employee vigor.

**Theory of Resource Conservation (Hobfoll, 1989)**

The Theory of Conservation of Resources (COR) states that individuals seek to acquire, maintain, and protect their personal resources, such as energy, motivation, and emotional well-being. According to Hobfoll (1989), employees tend to experience stress and burnout when they perceive a loss of resources, while those who manage to conserve and accumulate energy are more likely to maintain high levels of engagement and performance.

From this model, the relationship between absorption and vigor is explained by the ability of employees to maintain their concentration at work, thus increasing their perception of control over tasks and optimizing the use of their energy. Absorption allows an efficient use of cognitive resources, reducing fatigue and facilitating energy recovery throughout the working day. This suggests that employees who experience high levels of absorption are less likely to suffer from burnout, as their involvement in tasks allows them to better manage their physical and mental effort.

This theory also highlights the importance of organizational support and job stability in resource conservation, since employees who perceive security in their work environment are more likely to sustain high levels of engagement and vigor over time.

**Neuroscience of Engagement and Attention (Kahn, 1990)**

From a neuroscientific perspective, the relationship between absorption and vigor can be explained through the role of the prefrontal cortex in the regulation of attention, mental energy, and emotional self-regulation. Studies have shown that work engagement is related to greater activation of brain regions linked to executive control, which allows employees to remain focused and with high levels of energy in their tasks (Kahn, 1990; **Lavigne, Forest & Crevier-Braud, 2012).**

When an employee experiences absorption at work, their brain optimizes energy use by reducing interference from irrelevant stimuli and prioritizing focus on the task. This efficiency in attentional regulation favors persistence in effort and reduces cognitive fatigue, which translates into greater vigor and endurance throughout the working day.

In addition, research in organizational neuroscience has found that highly engaged employees experience an increased release of dopamine and serotonin, neurotransmitters associated with pleasure and motivation. This mechanism reinforces the relationship between absorption and vigor, since immersion in meaningful tasks generates a brain response that strengthens energy and readiness for work.

Methodology and Expected Results

To examine this relationship, a quantitative, correlational and explanatory design was used, based on the estimation of a simple linear regression model. Data from a sample of employees were analyzed to assess how absorption predicts vigor in the organizational environment.

The results are expected to confirm the hypothesis that absorption at work is a significant predictor of vigor. In particular, the coefficient of the Absorption variable is expected to be positive and statistically significant, which would indicate that employees who are highly absorbed in their tasks tend to show higher levels of energy and endurance at work. From an applied approach, these findings can be used to design organizational strategies aimed at increasing work engagement, promoting practices that favor absorption at work, such as the design of challenging tasks, the promotion of autonomy and the improvement of the organizational climate.

**Methodology**

**Study Design**

The present study adopts a quantitative, correlational and explanatory approach, with the aim of analyzing the relationship between Absorption and Vigor in employees within the organizational context. To do this, a simple linear regression model is used, which allows the influence of absorption on vigor at work to be evaluated.

The econometric model is expressed as follows:

$Y=B0+B1X1+uY = B_0 + B_1X_1 + u$

where:

- YY represents the dependent variable *Vigor*,
- X1X_1 is the independent variable *Absorption*,
- B0B_0 is the intercept of the model,
- B1B_1 is the coefficient of the explanatory variable,
- UU is the term for random error.

This design allows us to assess whether an increase in absorption at work is associated with greater vigor in employees.

Population and Sample

The study population is made up of employees belonging to various organizations. A sample of 233 observations was used, ensuring representativeness and stability in the estimation of the statistical model.

The sample selection criterion was non-probabilistic for convenience, using previous records containing information on levels of absorption and vigor at work. Homogeneity in data collection was ensured to minimize potential biases.

Instruments

To measure the variables, scales validated in the literature on work engagement were used:

- Absorption: Assessed using the Absorption subscale of the Utrecht Work Engagement Scale (UWES), widely used in studies of work engagement (Schaufeli et al., 2002).
- Vigor: Measured through the UWES Vigor subscale, which assesses the level of energy and persistence at work.

Both scales have demonstrated high levels of reliability and validity in different organizational contexts (Bakker & Demerouti, 2007; Salanova et al., 2011).

For the statistical analysis, the R software was used, applying regression techniques and diagnostic tests of the model.

Data Analysis

The statistical analysis was carried out in several stages:

1. Descriptive analysis: Measures of central tendency and dispersion were calculated to examine the distribution of variables.
2. Estimation of the regression model: The ordinary least squares (OLS) method was used to determine the relationship between *Absorption* and *Vigor*.
3. Model validation: Various econometric tests were applied to verify compliance with the assumptions of simple linear regression:
    - GVLMA test: Confirmed that the model meets the fundamental assumptions of the regression (p=0.5988p=0.5988).
    - Ramsey test: Verified the correct specification of the model (p=0.3645p=0.3645).
    - Rainbow test: Confirmed the linearity of the model (p=0.8794p=0.8794).
    - Durbin-Watson test: Ensured independence from errors (p=0.2988p=0.2988).
    - Shapiro-Wilk test: Validated the normality of the residuals (p=0.5093p=0.5093).

**Table 1 presents the statistical tests for validating the model:**

**Table 1**

*Linear Regression Model Diagnostic Tests*

| Test | Statistical | P-Value | Decision |
|---|---|---|---|
| GVLMA (Global) | 2.7596 | 0.5988 | Acceptable assumptions |
| Ramsey (RESET) | 1.0136 | 0.3645 | Correct Specification |
| Rainbow | 0.8040 | 0.8794 | Confirmed linearity |
| Durbin-Watson | 1.9322 | 0.2988 | No autocorrelation |
| Shapiro-Wilk | 0.9942 | 0.5093 | Normality confirmed |

*Note.* $p < 0.05$ indicates statistical significance.

These results indicate that the model meets the criteria of statistical validity, allowing its coefficients to be interpreted with confidence.

**Results**

Data analysis allowed us to evaluate the relationship between Absorption and Vigor in employees within the organizational context. Through a simple linear regression model,

the impact of the independent variable (*Absorption*) on the dependent variable (*Vigor*) was determined, which allowed validating the hypothesis that an increase in absorption is associated with a higher level of vigor at work.

Descriptive Statistics

Before estimating the econometric model, a descriptive analysis of the variables was carried out in order to understand their distribution and dispersion.

Table 2

***Descriptive Measures of Variables***

| Variable | Minimal | 1st Quartile | Median | Stocking | 3rd Quartile | Maximum |
|---|---|---|---|---|---|---|
| Vigor | 5.00 | 21.25 | 25.00 | 25.05 | 30.00 | 36.00 |
| Absorption | 5.00 | 21.25 | 26.00 | 25.82 | 31.00 | 36.00 |

*Note.* The measurements are presented on a scale of 5 to 36 points.

The results show that both variables present homogeneous distributions, without extreme outliers that could affect the model's estimation.

Regression Model Estimation

The estimated simple linear regression model is expressed as follows:

Y^=5.55019+0.75497X1+u\hat{Y} = 5.55019 + 0.75497 X_1 + u

where:

- Y^\hat{Y} represents the dependent variable *Vigor*,
- X1X_1 is the independent variable *Absorption*,
- 5.550195.55019 is the model intercept,
- 0.754970.75497 is the coefficient that measures the impact of *Absorption* in *Force*,
- UU represents the term random error.

**Table 3 presents the estimated coefficients and their statistical significance:**

**Table 3**

*Coefficients of the Linear Regression Model*

| Coefficient | Estimate | Standard Error | Value t | P-Value |
|---|---|---|---|---|
| Intercept | 5.55019 | 1.05029 | 5.284 | < 0.001 |
| Absorption | 0.75497 | 0.03957 | 19.078 | < 0.001 |

*Note.* Coefficients with $p < 0.05$ are considered significant.

The estimated coefficients indicate that there is a positive and highly significant relationship between Absorption and Vigor. Specifically, for each additional unit in *Absorption*, Vigor increases by approximately 0.75497 units.

The adjusted coefficient of determination (adjusted R2R^2 = 0.609) indicates that 60.9% of the variability in Vigor is explained by the Absorption variable, which suggests a strong association between both variables.

Model Validation

To evaluate the validity of the model, several statistical tests were carried out in order to verify compliance with the fundamental assumptions of the regression:

**Table 4**

*Linear Regression Model Diagnostic Tests*

| Test | Statistical | P-Value | Decision |
|---|---|---|---|
| GVLMA (Global) | 2.7596 | 0.5988 | Acceptable assumptions |
| Ramsey (RESET) | 1.0136 | 0.3645 | Correct Specification |
| Rainbow | 0.8040 | 0.8794 | Confirmed linearity |
| Durbin-Watson | 1.9322 | 0.2988 | No autocorrelation |
| Shapiro-Wilk | 0.9942 | 0.5093 | Normality confirmed |

*Note.* $p < 0.05$ indicates statistical significance.

The results confirm that the model meets the criteria of specification, linearity, normality and absence of autocorrelation, which allows its coefficients to be interpreted with confidence.

**Interpretation of the Results**

The findings suggest that employees who experience high levels of absorption in their job tasks tend to manifest greater vigor in their job performance. This relationship is consistent with the principles of the Work Engagement Theory (Schaufeli et al., 2002), which postulates that workers immersed in their tasks experience higher levels of energy and persistence.

From the perspective of the Work Demands and Resources Model (Bakker & Demerouti, 2007), these results indicate that absorption at work can be considered a positive work resource that contributes to maintaining high levels of energy and endurance over time. Likewise, the Theory of Conservation of Resources (Hobfoll, 1989) supports these findings by suggesting that employees who achieve a deep immersion in their activities tend to conserve and optimize their energy for job performance.

These results have important implications for organizational management, as they suggest that encouraging absorption at work could be an effective strategy to improve vigor levels in employees. Strategies such as designing challenging tasks, increasing work autonomy, and promoting a stimulating work environment could help maximize engagement and performance in organizations.

**Discussion**

The results obtained in this study confirm the existence of a positive and statistically significant relationship between Absorption and Vigor in employees within the organizational context. Simple linear regression revealed that as absorption levels increase, vigor also increases, suggesting that workers who experience greater immersion in their work tasks tend to manifest higher levels of energy and persistence in their performance.

**Relationship between Absorption and Vigor in the Theoretical Framework**

These results are consistent with the Theory of Work Engagement (Schaufeli et al., 2002), which postulates that engagement is composed of three key dimensions: vigor, absorption, and dedication. According to this model, employees who achieve high levels of absorption in their work tend to experience greater energy and endurance, which explains the positive association between both variables found in this study.

Likewise, the Work Demands and Resources Model (Bakker & Demerouti, 2007) supports these findings by establishing that work resources, such as task challenge and organizational support, foster states of absorption in employees, which in turn increases their vigor. The evidence obtained in this research suggests that absorption could act as a key labor resource that optimizes workers' energy and engagement.

From the perspective of Resource Conservation Theory (Hobfoll, 1989), absorption at work can be interpreted as a mechanism that allows employees to conserve and manage their energy resources more efficiently. In this sense, workers who experience a deep immersion in their activities have a greater capacity to sustain high levels of energy and persistence over time, which translates into greater vigor in work performance.

**Comparison with Previous Studies**

The results obtained in this study are consistent with previous research that has explored the relationship between absorption and vigor in different organizational contexts. For example, Salanova et al. (2011) found that employees who reported higher levels of absorption in their tasks experienced higher levels of vitality and endurance in their work performance. Similarly, studies in the area of work psychology have shown that absorption is a key predictor of vigor and satisfaction in employment (Bakker et al., 2014).

In addition, recent studies have pointed out that absorption at work is associated with improvements in productivity and psychological well-being, as employees who achieve high levels of concentration in their activities tend to experience less fatigue and greater satisfaction with their work (Sonnentag, Mojza, Demerouti & Bakker, 2012). This is

consistent with the evidence presented in this study, where absorption at work was identified as a positive and significant predictor of vigor.

From organizational neuroscience, it has been shown that absorption states are related to greater activation in the dorsolateral prefrontal cortex, which is involved in cognitive control and the regulation of sustained effort (Lavigne, Forest & Crevier-Braud, 2012). This neurobiological mechanism could explain why employees who experience greater absorption in their work are able to maintain high levels of vigor throughout the workday.

Implications for Organizational Management

The findings obtained in this study have important implications for talent management and the design of organizational strategies. The positive relationship between absorption and vigor suggests that encouraging concentration and immersion at work could be an effective strategy for improving employee well-being and performance.

Some key strategies that could be implemented in organizations include:

1. Design of challenging and meaningful tasks: According to the JD-R Model (Bakker & Demerouti, 2007), tasks that represent an adequate challenge for employees can increase absorption at work and, therefore, improve their vigor.
2. Promotion of work autonomy: The literature has shown that employees with greater autonomy in the management of their tasks tend to experience greater absorption and commitment at work (Deci & Ryan, 2000).
3. Creating stimulating work environments: Dynamic and innovation-oriented workspaces can facilitate states of absorption, which positively impacts employees' energy levels and persistence (Salanova et al., 2011).
4. Development of mindfulness and mindfulness programs: Research has shown that mindfulness techniques can improve the ability to concentrate at work, which in turn favors absorption and vigor in work performance (Good et al., 2016).

Conclusions

The present study analyzed the relationship between Absorption and Vigor in employees, confirming that there is a positive and statistically significant association between both variables. The estimation of the simple linear regression model indicated that as levels of absorption at work increase, employee vigor also increases, suggesting that workers who are highly immersed in their tasks experience higher levels of energy and persistence in their performance.

From a theoretical perspective, these findings reinforce the postulates of the Work Engagement Theory (Schaufeli et al., 2002), which establishes that absorption is a key dimension of engagement and that its presence is related to greater vitality at work. Likewise, the Labor Demands and Resources Model (Bakker & Demerouti, 2007) supports that labor resources can strengthen both absorption and vigor, which is consistent with the results obtained in this study.

The findings are also consistent with previous research that has shown that absorption at work is not only associated with higher levels of energy and persistence, but also with improvements in productivity, psychological well-being, and job satisfaction (Salanova et al., 2011; Bakker et al., 2014). From organizational neuroscience, the relationship between absorption and vigor can be explained through the activation of the dorsolateral prefrontal cortex, a region of the brain responsible for regulating cognitive effort and concentration (Lavigne, Forest & Crevier-Braud, 2012).

Practical Implications

The results of this study have important implications for organizational management, as they suggest that encouraging absorption at work can be an effective strategy to improve employee vigor and engagement. Based on these findings, organizations are recommended to:

- Design challenging and meaningful tasks, which allow employees to become deeply involved in their activities and experience greater vigor.

- Encourage autonomy at work, allowing employees to have greater control over their work processes, which has been shown to improve absorption and energy in performance.
- To create stimulating work environments, promoting an organizational culture oriented towards innovation, continuous learning and the development of human talent.
- Incorporate mindfulness and mindfulness programs, which have shown positive effects on employee work concentration and psychological well-being (Good et al., 2016).

**Bibliographic References**


1. Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328. https://doi.org/10.1108/02683940710733115
2. Bakker, A. B., & Bal, P. M. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, 83(1), 189-206. https://doi.org/10.1348/096317909X402596
3. Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64(1), 89-136. https://doi.org/10.1111/j.1744-6570.2010.01203.x
4. Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The Job Demands-Resources model of burnout. *Journal of Applied Psychology*, 86(3), 499-512. https://doi.org/10.1037/0021-9010.86.3.499
5. Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495-513. https://doi.org/10.1016/j.jsp.2005.11.001
6. Halbesleben, J. R. B. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 102-117). Psychology Press.
7. Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692-724. https://doi.org/10.2307/256287
8. Kim, W., Kolb, J. A., & Kim, T. (2013). The relationship between work engagement and performance: A review of empirical literature and a proposed research agenda. *Human Resource Development Review*, 12(3), 248-276. https://doi.org/10.1177/1534484312461635
9. Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1(1), 3-30. https://doi.org/10.1111/j.1754-9434.2007.0002.x
10. Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422. https://doi.org/10.1146/annurev.psych.52.1.397
11. Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617-635. https://doi.org/10.5465/amj.2010.51468988
12. Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600-619. https://doi.org/10.1108/02683940610690169
13. Salanova, M., Agut, S., & Peiró, J. M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology*, 90(6), 1217-1227. https://doi.org/10.1037/0021-9010.90.6.1217

14. Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30(7), 893-917. https://doi.org/10.1002/job.595
15. Schaufeli, W. B., Taris, T. W., & Van Rhenen, W. (2008). Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology*, 57(2), 173-203. https://doi.org/10.1111/j.1464-0597.2007.00285.x
16. Shimazu, A., Schaufeli, W. B., Kamiyama, K., & Kawakami, N. (2015). Workaholism vs. work engagement: The two different predictors of future well-being and performance. *International Journal of Behavioral Medicine*, 22(1), 18-23. https://doi.org/10.1007/s12529-014-9410-x
17. Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518-528. https://doi.org/10.1037/0021-9010.88.3.518
18. Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, 82(1), 183-200. https://doi.org/10.1348/096317908X285633