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Research article

Improving Work Meaning and Safety Climate: A Research-Intervention

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Abstract

This research explored the improvement of one of the meanings of work and factors of safety climate, applying a feedback-based intervention. We selected some aspects of work meaning based on previous research on the building construction industry. Using a research-intervention design and structuring the research to include a pre- and post-test, we found changes in some variables, particularly regarding Recognition in work meanings and three factors of safety climate: Safety Contents, Personal Involvement with Safety, and Organizational Safety Practices. Finally, we discussed the theoretical and practical implications of the results, indicating it is feasible for people management professionals to promote effective changes.

Keywords: *Work Meaning; Safety Climate; Building Construction; People Management; Research Intervention*

Abbreviations

DIEESE: Inter-Union Department of Statistics and Socio-Economic Studies; ILO: International Labour Organization; OSCI: Organizational and Safety Climate Inventory; PCS: Psychological Contract of Safety; SPSS: Social Package of Social Sciences; SSA: Smallest Space Analysis; WAMI: Work and Meaning Inventory

Introduction

Brazil's construction industry employs a large number of people and serves as an engine for other sectors (e.g., trade, finance). However, it has a low productivity level when compared to similar economic sectors in other countries [1,2], with managerial problems such as unsatisfactory working conditions [3-6] and high turnover rates [1,7,8], which have persisted in this sector. Besides, construction safety issues are a major concern in Brazil, with this sector infamously known as one of the most dangerous in the country [9-12]. Studies from several geographic samples have shown that the construction industry has a substantial risk of accidents [13,14].

The period of research development the civil construction in Brazil had concluded a time of large expansion and was experimenting in time of crisis economic. The Inter-Union Department of Statistics and Socio-Economic Studies, DIEESE [15] showed that, since 2015, the occupational structuration happened from 2004 to 2014 begin deteriorated. In relation to working relations, it meant growth of autonomous work, decay of employment rate, reduction of workers' rent and of access to social protection among other aspects.

Facing this reality, we planned this research aiming to explore whether feedback-based interventions would impact work meaning and safety climate. Our expectations were in the sense that searching this objective could contribute to the improvement of people man-

agement and minimize lost to the workers' quality of life, because the literature has referred to safety climate [16,17] as one of the best indicators to avoid accidents and to work meaning [18-21] in its importance do mediate the relationship between individuals in the work world. Newaz., *et al.* (2019) [22] recognized the positive impacts of safety climate to safety behavior, with better safety outcomes in construction industry.

Work meaning

People build symbolic meanings for themselves as part of life, which comprises the social construction of their own cultural reality [23,24]. People are, therefore, active agents who participate in the transformation of the world, and such situational interactions, in turn, transform people again. Borges and Tamayo (2001) [25] defined work meaning as a subjective and social cognition that derives from the individual process of attributing meaning and simultaneously presenting socially shared aspects that reflect the historical conditions of society.

The studied literature [26-30,32-38] tended to consider work meaning as a multifaceted phenomenon. However, in this research, we used only the two specific facets identified in Borges and Tamayo's (2001) [25] model: valued and descriptive attributes. The first facet relates to what the job or work must or could be, inspired by the notion that people have desirable goals that guide their decisions and choices [39]. The second facet comprises the characteristics of the job or work according to an experimental concrete reality in different situations.

The referred model may incorporate other authors' accounts, as follows: 1) Martin-Baró (1990) [40] and Acktouf (1986) [41] showed that work meanings encompass contradictions, considering that people experience pleasurable aspects, and, simultaneously, aspects of pain, disappointment, exhaustion, and dehumanization; 2) Brief and Nord (1990) [28] and Ros, Schwartz, and Surkiss (1999) [42] recommended to consider power issues; and 3) Borges (1996) [43] identified categories such as heavy work, health expression, and dehumanization. Valued and descriptive attributes can encompass all these aspects while differentiating them as valued and descriptive facets. However, if we considered work meaning as a sociohistorical phenomenon, we must be aware that their attributes are dynamic and/or contingent to societal, institutional, and organizational changes. Borges and Barros (2015) [44] used the Smallest Space Analysis (SSA) to examine the structure of the attributes presented in the answers of workers in the building construction industry. In the results, we paid attention that Human Respect obtained the highest valued attributes scores (M = 4.78; SD = .32; scale from 1 to 5). These authors also found that Recognition and Equitable Remuneration among descriptive attributes had a singular position, because they presented lower scores than they consider desirable to maintain the attractiveness of the job and these descriptive attributes has spatial position in the SSA which indicated an influence of the dehumanization axis. These aspects can lead to a comprehension that workers really perceive lack of recognition and equitable remuneration. Because of these observations, we stablished as our specific objective to explore whether the scores in such descriptive and valued attributes can change through intervention.

Safety climate

Zohar (1980) [45] defined safety climate as a particular organizational climate that comprises the molar perceptions employees share about their work environment, indicating that the safety climate covers a collective dimension. In another study, Zohar (2000) [46] stated that the "sources of climate perceptions relate to two levels of analysis, that is, policies and procedures related to the organizational level and supervisory practices related to the group level of analysis" (p. 587). Zohar's findings offered empirical support for three validation criteria of the group-level safety climate: within-group homogeneity, significantly different safety climate scores across subunits, and the ability of these scores to predict subunit safety records in the months following the climate measurement.

Zohar and Luria (2010) [47] found that "transformational supervisors act as gatekeepers by buffering the potential harmful effects of a poor and/or weak organizational safety climate on group members" (p. 664). Further studies [48,49] have also attributed importance to leadership in the construction of a safety climate.

The importance of safety climate has been highlighted by several studies, showing its potential to predict safety behavior and minimize injuries and/or work accidents [16,17,50]. Tomás., *et al.* (2011) [17], for instance, argued that improvements in safety management systems needed to include actions that foster a safety climate. In a meta-analytic study, Beus, Dhanani, and McCord (2015) [51] found that a safety climate was more influential for explaining the variance in safety-related behavior than personality traits.

Nahrgang., *et al.* (2011) [14] and Nielsen., *et al.* (2011) [48] amplified the conceptualization of safety climate in a theoretical context related to the job demands-resources model (JD-R model) [53] by organizing various working conditions as antecedents to safety and a safety climate. Hence, these studies argued that a safety climate affects the workers' ability in dealing with job demands, achieving goals, reducing physiological and psychological costs, and stimulating personal growth and development. Beus., *et al.* (2010) [53] developed meta-analytic research, and the results of which corroborated the notion that the injury-safety climate relationship is dynamic because one affects the other and safety climate changes according to work times. As previously mentioned, the building construction sector is one of most dangerous in terms of work accidents, so safety climate is an important part of sociability at construction sites.

Zohar and Polacheck (2014) [54] evaluated an intervention to improve safety climate and organizational performance; however, they considered the complexity of developing a safety climate because of a conflict between interest for safety and priority for productivity and speed. The intervention involved two individual feedback sessions with supervisors and focused on communications between supervisors and workers in an attempt to assist supervisors interpret the results of the first questionnaire phase. The success of these interventions motivated the research design in the present paper.

All focused phenomena - work meaning and safety climate - are related to the social context and/or sociability within organizations. Due to this, we expect the managers to think about what sociability involves and consider the workers' opinion of these phenomena, resulting in changes in the way that the workers face their jobs and their attitudes toward the organization. This scope of phenomena comprehension concerns the objective of our research.

Materials and Methods

We conducted the research at a midsize building construction company that predominantly worked with upper-middle class projects in the city of Belo Horizonte (MG), Brazil. As a preliminary phase (the second half of 2014), we contacted managers and human resource professionals to negotiate how to conduct this study, in which the intervention research, objectives, procedures, and time required were explained. After their authorization, we planned to conduct a questionnaire survey with the engineers at each building construction site. We decided the intervention schedule in accordance with human resource professionals and engineers.

We applied a three-phase interventional research design in early 2015. The first and third phases (pre- and post-tests) involved structured questionnaires focused on work meaning and safety climate. The second phase consisted of action interventions. This strategy based on an analysis of the answers from the pre-test to stimulate changes to improve their perceptions of work meaning and safety climate. We discussed the results of the first phase with groups of managers - also including engineers, human resource professionals, occupational health and safety workers, and middle managers at three construction sites approximately one month after the first phase. Three to four months after the first phase, we returned to the construction sites and conducted meetings with members of the same groups. The third phase was carried out five months after the first one. We established the interval lengths, considering the evolution of the construction process and the number and diversity of workers involved in the activities.

Participants to application of questionnaires

Although the company largely adopted outsourcing, we developed our study only with directly hired employees, under standard employment relationships (what we call "CLT workers" in Brazil), who would be with the company during the whole research period. We

applied questionnaires to 157 workers (pre-test = 78 and post-test = 77 participants) of the same company at three construction sites, two of which were remarkably close to each another. Worker participation was anonymous with the aims to obtain spontaneous answers and to offer them ethical protection. Consequently, we did not control who the participants were in the first and/or third phases and, therefore, this was not a longitudinal design.

Most operative workers (52.6% in the first phase and 59.7% in second phase) had not completed elementary school. However, the results of the chi-square test indicated that the distribution of educational level between the two samples (chi-square [Pearson] = .65; p = .72) was similar. The average total work experience was 24.6 years (SD = 13.09), the average time in the building construction sector was 12.22 years (SD = 9.98), and the average job tenure was 2.66 years (SD = 4.07). Therefore, the differences across these three items indicated a typical employee turnover rate. The participants were, on average, 40.48 years old (SD = 12.53). The results of the t test (respectively, t = -1.46 and p = .15; t = -.67 and p = .5; t = .87and p = .39; t = -.67 and p = .51) corroborated the equivalence between the samples in terms of the three items related to the length of service in the industry and average age.

Instruments

Questions of Work and Meaning Inventory (WAMI). We used the WAMI [44], selecting the items that measured a valued attribute (Human Respect [α = .86]) and two descriptive attributes (Recognition [α = .76] and Equitable Remuneration [α = .66]) [44]. The questions were answered on a scale ranging between "0" and "4," with scores indicating the extent to which the participant agreed with a given statement. In the questions about the descriptive attributes, scores indicated the extent to which the attribute corresponded to the reality of the current workplace.

Organizational and Safety Climate Inventory (OSCI). It measures four factors: Safety Contents (compliance with standards, highlighting safety objectives, updating standards, enhancing safety, and workers' well-being) (α = .83), Safety as an Organizational Value (composed for items about attribution of the importance to safety in work environment) (α = .75), Organizational Safety Practices (perception of the organizational actions to improve safety) (α = .86), and Personal Involvement with Safety (organizational involvement with safety according to their presence in actions such as management activities, safety training, safety effectiveness, organizational learning with accidents, and quality of safety communications) (α = .80). Silva, Lima, and Baptista (2004) [55] elaborated the OSCI in Portugal, and Gonçalves (2007) [56] examined the evidences of construct validity using confirmatory factor analysis with a sample of Brazilian workers in the sugar-alcohol sector, in which a low educational level also tends to prevail.

Sociodemographic and occupational form. This form was used to gather information about the participants' demographics such as age, length of work in the industry, and educational profiles. The answers to this form were important to examine the equivalence between the sample groups (pre- and post-test).

Questionnaire application

We applied the questionnaires individually. Regarding the educational profile of the participants, a member of the research team read the questions to the participant and provided sheets of paper with the scales for each questionnaire represented by brighter color shades. Hence, the participants did not need to memorize the scales and could show the answer. We registered the answers using computerized handheld devices (Pocket PC). This procedure had been used in similar previous research [44] and has been shown to be effective to participants with low educational levels. Afterward, we transferred the registered answers to a database file in the Social Package of Social Sciences (SPSS), software for data analysis.

Results

Table 1 shows that there were significant differences between the group averages for the descriptive attribute of the work meanings, i.e., Recognition, and the factors of safety climate: Safety Contents, Personal Involvement with Safety, and Organizational Safety Practices.

The descriptive value, Equitable Remuneration, was characterized by a perception of work as a right of all people, for which workers must receive economic and social rewards in proportion to their efforts and for which they have the right to work in a sanitized (humanized) environment [44]. The Safety Contents factor refers to the workers' perceptions regarding habits of compliance with standards, highlighting safety objectives, enhancing safety, and an interest in the workers' well-being (Gonçalves, 2007; Silva., *et al.* 2004).

When discussing the results of the pre-test with the engineers, technical safety workers, and middle managers at the three construction sites in specific reunions, we observed that there were more signs of resistance from higher-level managers and higher levels of acceptance from the middle managers. However, over time, almost all participants reported more issues associated with the economy, company, and managerial practices, especially those related to outsourcing practices. They sought to defend the adopted practices of the company, but their comments revealed that the perception of Equitable Remuneration was associated with a sharp increase in outsourcing, clarity of information, and low expectations due to the unfavorable economic period. However, as Recognition is more related to sociability, it is the responsibility of the middle managers, whereas since Equitable Remuneration is more related to organizational politics, it concerns higher hierarchical levels. Consequently, paying attention to clarity of information can potentially change the attribution of Recognition among the work meanings. Furthermore, the literature on outsourcing [57,58] has underlined those who remain directly hired employees in an organizational environment tend to change their expectations about sociability. Additionally, the managers seemed more concerned about the feedback regarding safety and specific needs than sociability. These observations corroborated the significant differences in the results shown on Table 1 (Table 1).

Factors/Types	Previous test		Posteriori test		t test
	Mean	Standard Deviation	Mean	Standard Deviation	
Work meaning (valued attributes)					
Human Respect	4.66	.31	4.62	.36	t = .69; p = .49
Work meaning (descriptive attributes)					
Recognition	3.55	.76	3.82	.74	t = 2.19; p = .03
Equitable Remuneration	3.63	.72	3.68	.77	t = .45; p = .65
Safety climate					
Safety as an Organizational Value	4.80	.95	5.04	.95	t = 1.53; p = .12
Safety Contents	5.10	1.18	5.56	1.10	t = 2.56; p = .01
Personal Involvement with Safety	4.71	1.18	5.12	.93	t = 2.45; p = .02
Organizational Safety Practices	4.21	.63	4.41	.60	t = 2.05; p = .04

Table 1: *Participant comparison in the pre- and post-tests.*

Discussion and Conclusion

Effectively, the intervention affected three factors of safety climate and one descriptive attribute (Recognition) of work meaning. When considering each variable, the changes between the two questionnaires sessions can be understood as related to sociability, which is something middle managers and technical professionals had more control. The Human Respect (valued attribute) could also be under-

stood in the context of sociability, but this type of valued attribute had an extremely high score in the pre-test. The factors related to other types of work meaning (Equitable Remuneration) tended to be more dependent on the goals, policies, and general lines of the production process, involving senior management within the organization. Furthermore, the intervention was not conducted in the whole company but only in three sites. Likewise, the general policies did not change the accompanying intervention. This interpretation corroborated Zohar's (2000) [46] and Zohar and Luria's (2005) [59] arguments that safety climate is a multilevel phenomenon whereby it is possible to separate two sources for its elaboration, such as an organizational level and a group/subunit level. Supporting this notion of two levels of analysis, we observed that the only measured factor of safety climate that did not change as a result of the intervention was Safety as an Organizational Value, whose source is more at the organizational level. We must not ignore the argument that the greatest improvement in the safety climate demands the involvement of all hierarchical levels of an organization (60].

Newaz., *et al.* [2019) [22] explores the phenomena designed by the psychological contract of safety (PCS) as an antecedent of safety climate, finding results that corroborate the expect relationship. Understanding that the PCS concept is based on the social ex-change theory, where the pact about the necessity and importance of safety behaviors and organizational politics is directly established by safety agents (workers, co-workers, and supervisors), then we understand that these authors also focused on interpersonal interaction. Consequently, our results regarding the effectiveness of the interventions in the improvement of scores of the three factors of safety climate corroborate the findings of those authors. They recommended that "intervention to change the mindset of supervisors and workers could be done by adapting the nature of perceived obligations." Further strengthening this point of view, Bamel., *et al.* (2020) [50], included the role of leadership as the topics that demand more attention and research in their ample literature review.

The changes were statistically significant but were not large. We emphasize, however, that the applied intervention was effective in a scenario of stagnation and/or economic crisis. This fact made us question whether the effect would be larger in an expansive scenario. Therefore, we suggest exploring the effectiveness of the intervention in distinct economic scenarios. However, it is ethical to highlight the feasibility of these interventions regardless of the scenario because it has the potential to minimize human suffering.

In Brazil, an economic crisis that started in 2015 (period of our field activities) has been amplified and worsened in 2020 with the pandemic [61]. According to the ILO report (2021) [61], the informality rates in the sector reached 63.8% at 2019 and 61.7% in 2020. According to the official data, the construction industry was responsible for 11917 (in 2016), 9292 (in 2017) and 9291 (in 2018) occupational accidents in the country with incidence rates of 7.56/1000 workers. Although this situation is undesirable, it should not be used by organizations to justify omissions in the improvement of managerial practices or to promote a better safety climate.

It is also necessary to consider the real possibility that the changes in the scores can be related to work meanings for this company. In a previous study [62] a sample from the same company that participated in this study had higher scores than the other one in Human Respect, Recognition, and Equitable Remuneration (respectively, $t = 19.75$ and $p < .001$; $t = 9.50$ and $p = .001$; $t = 13.66$ and $p = .001$). Such study attributed these differences to the sharp increase in outsourcing by the company which participated of this research; the interviews revealed that directly hired employees perform activities have greater safety (or fewer risks) and are not as much under pressure for productivity and/or speed. However, they had more frequent and closer interpersonal relationships with their immediate and senior supervisors. The Equitable Remuneration (scale from 0 to 4) score was already exceedingly high in the first phase, even though some workers (in their interviews) had complained of the wage gap compared to employees who had been employed through a juridical person (something we call "pejotizado" in Brazil).

The effectiveness of the developed intervention to increase the perception of Recognition (descriptive attribute of the work meanings) represents alternative actions to promote it. This way valued some authors' recommendations [63,64] to whom the enrichment of the work meanings has potential to amplify the workers' well-being [20]. This result also corroborated a review study [65] which showed that successful interventions have implied the relationship between leaders/supervisors and the workers.

Theoretical and methodological implications

The research shows that the applied intervention was effective to change one of the work meanings and three factors of organizational climate. It is a theoretical and methodological contribution, and it can be interpreted in a way to recognize the relevance of attributing it to the improvement of people management, following a highlighted trend for recent reviews [50,65] as well as empirical research [66]. Additionally, the results are coherent with the notions of dynamism and historicity of the focused phenomena (28,40,67,68], so they strengthen these notions and the adoption of the referred theoretical framework.

Implications for practices

The effectiveness and simplicity of interventions to change the safety climate and perceptions of work meaning showed its feasibility to organizations in the building construction industry if the managers of these companies desire to improve these aspects. We remember that safety climate is an important predictor of accident rates, which continues to represent an unresolved problem.

The effectiveness of interventions requires certain competencies from people management professionals, such as being able to evaluate the phenomena and being knowledgeable about quantitative analysis and program evaluation methods. These competencies are expected from these professionals or they can be developed.

Limitations and Directions for Future Research

The main weakness of this research was its methodological aspect: our option to select only one company to study. Other research teams can access a greater number of companies, in which is possible to develop intervention. In this way, for consequence, it would be possible to stablish more reflection distinguishing the involvement with safety climate in different levels of management.

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Conflict of Interest

The authors declare no potential conflict of interest regarding the research, authorship, and/or publication of this article.

Bibliography

1. Mello LCBB and Amorim SRLO. "Subsetor de edificações da construção civil no Brasil: Uma análise comparativa em relação à União Europeia e aos Estados Unidos". *Produção* 19.2 (2009): 388-399.

2. Mariz RN and Picchi FA. "Implementation of lean practices facilitated by BIM functionalities in the construction phase: advances and opportunities". *Ambiente Construído* 21.4 (2021): 309-328.

3. Borges L and Peixoto TP. "Ser operário da construção civil é viver a discriminação social". *Revista Psicologia: Organizações e Trabalho* 11.1 (2011): 21-36.

4. Iriart JA., *et al.* "Representações do trabalho informal e dos riscos à saúde entre trabalhadoras domésticas e trabalhadores da construção civil". *Ciência and Saúde Coletiva* 13.1 (2008): 165-174.

5. Oliveira RP and Iriart JAB. "Representações do trabalho entre trabalhadores informais da construção civil". *Psicologia Em Estudo* 13.3 (2008): 437-445.

6. Santos PHF and Barros VA. "A Condição de servente na construção civil". *Cadernos De Psicologia Social Do Trabalho* 14.2 (2011): 241-162.

7. Costa LR and Tomasi APN. "De peão a colaborador: Racionalização e subcontratação na construção civil". *Caderno CRH* 27.71 (2014): 347-365.

8. Ramos CA and Carneiro FG. "Os determinantes da rotatividade do trabalho no Brasil: Instituições x ciclos econômicos". *Nova Economia* 12.2 (2002): 31-56.

9. Brasil. "Anuário Estatístico de Acidente do Trabalho [AEAT]. (2018).

10. Bridi ME., *et al.* "Identificação de práticas de gestão da segurança e saúde no trabalho em obras de construção civil". *Ambiente Construído* 13.3 (2013): 43-58.

11. Mangas RMN., *et al.* "Acidentes de trabalho fatais e desproteção social na indústria da construção civil do Rio de Janeiro". *Revista Brasileira de Saúde Ocupacional* 33.118 (2008): 48-55.

12. Santana VS., *et al.* "Acidentes de trabalho no Brasil entre 1994 e 2004: Uma revisão". *Ciência E Saúde Coletiva* 10.4 (2005): 841-855.

13. Carrero C. "Acercamiento al estudio de la prevención de riesgos laborales en el sector de la construcción. Consideraciones generales". *Las relaciones laborales en el sector de la construcción,* J. R. Mercader Uguina (Editor): Lex Nova. (2008): 417-429.

14. Nahrgang JD., *et al.* "Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement and safety outcomes". *Journal of Applied Psychology* 96.1 (2011): 71-94.

15. DIEESE. "Departamento Intersindical de Estatística e Estudos Socioeconômicos O trabalhador e a inserção ocupacional na Construção (2017).

16. Baby T., *et al.* "Occupational electrical accidents: Assessing the role of personal and safety climate factors". *Safety Science* 139 (2021): 105229.

17. Tomás JM., *et al.* "The relationship between safety attitudes and occupational accidents". *European Psychologist* 16.3 (2011): 209-219.

18. Heleno CT., *et al.* "The meaning of work as a predictor of the intention to remain/leave among teachers". *Revista de Administração Mackenzie* 19 (2018): 1-27.

19. Nunes TS., *et al.* "Sentidos e significados do trabalho para servidores públicos da Universidade Federal de Santa Catarina. Avaliação". *Revista da Avaliação da Educação Superior (Campinas)* 24.2 (2019): 379-398.

20. Pacheco VA and Ferreira MC. "Well-being and Ill-being at Work: Employee's Representations in a Brazilian Public Company". *Psicologia: Teoria e Pesquisa* 36 (2020): e3651.

21. Robertson KM., *et al.* "Finding meaning in relationships: The impact of network ties and structure on the meaningfulness of work". *Academy of Management Review* 45.3 (2020): 596-619.

22. Newaz MT., *et al.* "Using a psychological contract of safety to predict safety climate on construction sites". Journal of Safety Research 68 (2019): 9-19.

23. Berger PL and T Luckmann. *A construção social da realidade*. Translated by F. S. Fernandes. Vozes (2011).

24. Bruner J. *Actos de Significado: Para uma psicologia cultural.* Translated by V. Prazeres. Edições 70 (1997). (Impresso)

25. Borges LO and Tamayo A. "A estrutura cognitiva do significado do trabalho". *Revista Psicologia: Organizações e Trabalho* 1.2 (2001): 11-44.

26. Baudelot C and Gollac M. *Trabajar para ser feliz.* Buenos Aires: CEIL y CONICET (2011).

27. Bendassolli PF and Borges-Andrade JE. «Significado do trabalho nas indústrias criativas". *Revista de Administração de Empresas* 51.2 (2011): 143-159.

28. Brief AP and Nord WR. *Meaning of occupational work*. Lexington Books (1990).

29. Duffy RD., *et al.* "Work volition and job satisfaction: Examining the role of work meaning and person-environment fit". *The Career Development Quarterly* 63 (2015): 126-140.

30. Kubo SH., *et al.* "Dimensões do significado do trabalho e suas relações". *Pretexto 14.*3 (2013): 28-49.

31. Morin E., *et al.* "O trabalho e seus sentidos". *Psicologia and Sociedade* 19 (2007): 47-56.

32. MOW. Meaning of Occupational Work. International Research Team". *The meaning of working*. London: Academic Press (1987).

33. Neves DR., *et al.* "Sentido e significado do trabalho: uma análise dos artigos publicados em periódicos associados à Scientific Periodicals Electronic Library". *Cadernos Ebape.BR* 16.2 (2018): 318-330.

34. Oliveira MCL and Silveira SB. "O(s) sentido (s) do trabalho na contemporaneidade". *Linguística Aplicada das Profissões* 16.1 (2012): 149-165.

35. Palassi MP and Silva ARLA "Dinâmica do significado do trabalho na iminência de uma privatização". *Revista de Ciências da Administração* 16.38 (2014): 47-62.

36. Silva GC., *et al.* "Significado do trabalho voluntário empresarial". *Revista Psicologia, Organizações e Trabalho* 15.2 (2015): 157-169.

37. Tov W and Lee HW. "A closer look at the hedonics of everyday meaning and satisfaction". *Journal of Personality and Social Psychology* 111.4 (2016): 585-609.

38. Young HS and Yoon HH. "What does work meaning to hospitality employees? The effects of meaningful work on employees' organizational commitment: The mediating of job engagement". *International Journal of Hospitality Management* 53 (2015): 59-68.

39. Schwartz SH and Bilsky W. "Toward a universal psychological structure of human values". *Journal of Personality and Social Psychology* 53.3 (1987): 550-562.

40. Martin-Baró I. " ¿Trabajador alegre o trabajador explotado? La identidad del Salvadoreño". *Revista Interamericana de Psicología* 24.1 (1990): 1-24.

41. Acktouf O. "Une visíon interne des rapports de travail: Le cas de deux brasseries". *Le travail humain* 49.3 (1986): 237-248.

42. Ros M., *et al.* "Basic values, work values, and meaning of work". *Applied Psychology: an International Review* 48.1 (1999): 49-71.

43. Borges LO. "A representação social do trabalho: Um estudo empírico com trabalhadores da construção civil, indústria de confecções e costura e comércio de Brasília". *Estudos de Psicologia (Natal)* 1.1 (1996): 7-25.

44. Borges LO and Barros SC. "Inventário de significado do trabalho para trabalhadores de baixa instrução". *Ferramentas de diagnóstico para organizações e trabalho,* K. Puente-Palácios and A. Peixoto (Eds.): Artmed (2015): 232-260.

45. Zohar D. "Safety climate in industrial organizations: Theoretical and applied implications". *Journal of Applied Psychology* 65.1 (1980): 96-101.

46. Zohar D. "A group-level model of safety climate: Testing the effect of group climate on microaccidents in manufacturing jobs". *Journal of Applied Psychology* 85.4 (2000): 587-596.

47. Zohar D and Luria G. "Group leaders as gatekeepers: Testing safety climate variations across level of analysis". *Applied Psychology: An International Review* 59.4 (2010): 657-673.

48. Nielsen MB., *et al.* "Using the job-demands-resource model to investigate risk perception, safety climate and job satisfaction in safety critical organizations". *Scandinavian Journal of Psychology* 52 (2011): 465-475.

49. Probst TM. "Organizational safety climate and supervisor safety enforcement: Multilevel explorations of causes of accident under-reporting". *Journal of Applied Psychology* 100.6 (2015): 1899-1907.

50. Bamel UK., *et al.* "Safety climate: Systematic literature network analysis of 38 years (1980-2018) of research". Accident Analysis and Prevention 135 (2020): 105387.

51. Beus JM., *et al.* "A meta-analysis of personality and workplace safety: Addressing unanswered questions". *Journal of Applied Psychology* 100.2 (2015): 281-498.

52. Karasek RA. "Job demands, job decisions latitude, and mental strain: Implications for job design". *Administrative Science Quartely* 24 (1979): 285-308.

53. Beus JM., *et al.* "Safety climate and injuries: An examination of theoretical and empirical relationships". *Journal of Applied Psychology* 95.4 (2010): 713-727.

54. Zohar D and Polachek T. "Discourse-based intervention for modifying supervisory communication as leverage for safety climate and performance improvement: A randomized field study". *Journal of Applied Psychology* 99.1 (2014): 113-124.

55. Silva S., *et al.* "OSCI: An organisational and safety climate inventory". *Safety Science* 42 (2004): 205-220.

56. Gonçalves CMP. "Validação do instrumento ICOS - Inventário de clima organizacional de segurança - na área industrial de uma usina de álcool e açúcar (2007).

57. Davis-Blake A and Broschak JP. "Outsourcing and the changing nature of work"**.** *Annual Review of Sociology* 35 (2009): 321-340.

58. Grusenmeyer C. "Maintenance: organizational modes, activities and health and safety. Use of a French national survey and in-situ analyses". *Accident Analysis and Prevention* 73 (2014): 187-199.

59. Zohar D and Luria G. "A multilevel model of safety climate: cross-level relationships between organization and group-level climates". *Journal of Applied Psychology* 90.4 (2005): 616-628.

60. Borgheipour H., *et al.* "Predicting the relationship between safety climate and safety performance in cement industry". *Work: Journal of Prevention, Assessment AND Rehabilitation* 66.1 (2020): 109-117.

61. ILO. International Labour Organization, Brasil: "Impacto da pandemia de COVID-19 sobre o mercado de trabalho" (2021).

62. Borges LO., *et al.* "Os impactos da terceirização em empregados efetivos: Um caso na construção de edificações". *Revista Psicologia: Organizações e Trabalho* 16.2 (2016): 176-189.

63. Leite RMC and Alves LRG. "Gamification Strategies: a web system to disseminate production information to construction workers". *Research, Society and Development* 10.12 (2021): e241101220293.

64. Pinheiro RA., *et al.* "Inventário do significado do trabalho: explorando evidências de validade no setor de edificações". *Estudos e Pesquisas em Psicologia* 17.1 (2017): 46-64.

65. Lee J., *et al.* "A systematic Review of the Safety Climate Intervention Literature: Past Trends and Future Directions". *Journal of Occupational Health Psychology* 24.1 (2019): 66-91.

66. Brondino M., *et al.* "Safety climate agreement for a safer work environment: A multilevel mediation analysis of the relationship between LMX and safety behaviors". TPM-Testing, Psychometrics, Methodology in Applied Psychology 27.3 (2020): 361-382.

67. Barros SC., *et al.* "Economic changes and the meanings of work and Money". *Journal of Work and Organizational Psychology* 33 (2017): 23-31.

68. Granero A., *et al.* "Labor conditions and the meanings of nursing work in Barcelona". *Revista Latino-Americana de Enfermagem* 26 (2018): e2947.

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