

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ
ESCUELA DE POSGRADO



Psychological Empowerment and Job Stress in Higher Education
Institutions in Ecuador

TESIS PARA OBTENER EL GRADO DE DOCTOR EN
ADMINISTRACIÓN ESTRATÉGICA DE EMPRESAS

PRESENTADA POR

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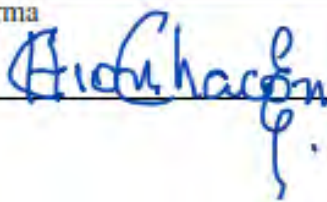
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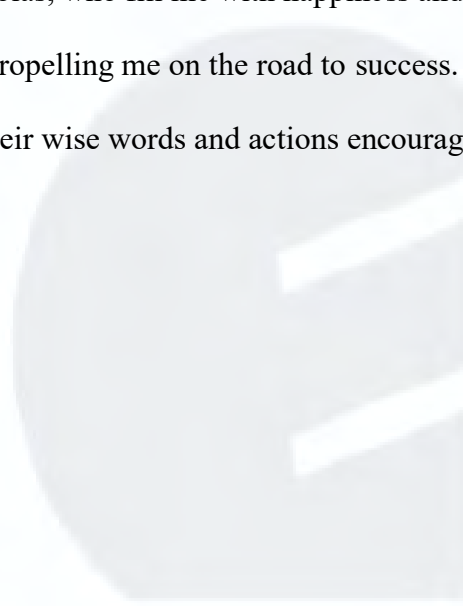
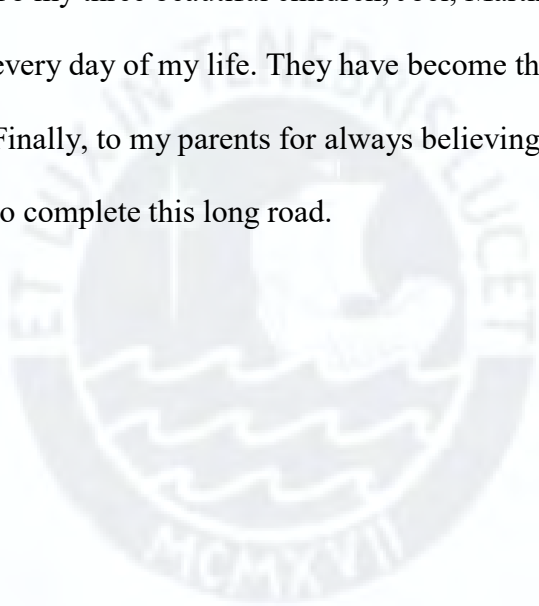
Dedication

Undertaking a doctoral study is a great challenge that changes people' lives; however, perseverance and personal and family sacrifices are rewarded at the end of the road. Achieving the desired dream leads to the perception of personal and family satisfaction.

This thesis is dedicated to my beloved husband Fabricio, for being my lover, friend, best companion, and the fundamental cornerstone in every part of my life. His support, motivation, and commitment contribute to fulfilling personal and family objectives.

To my three beautiful children, Joel, Martín, and Nicolas, who fill me with happiness and love every day of my life. They have become the engine propelling me on the road to success.

Finally, to my parents for always believing in me. Their wise words and actions encouraged me to complete this long road.



Acknowledgements

I want to express my deep gratitude to my advisor, Dr. Sergio Chi3n, for being such an extraordinary human capable of guiding me adequately throughout this educational process. Without his endless support, valuable experience, and wisdom, this goal would have never been accomplished.

I want to thank Dr. Rub3n Guevara for his unconditional support and encouraging words to conclude the investigation.

I am also grateful to Dr. Percy Marquina for sharing his valuable knowledge, and academic and professional experiences.

Finally, I express my gratitude to all teachers and administrative staff at CENTRUM PUCP for contributing to and encouraging me to achieve my doctorate.

Abstract

Psychological empowerment and work stress have been issues of great concern for diverse organizations. However, although these theories have been widely applied in developed countries, only a limited number of studies have contributed to increasing the knowledge regarding the relationship between these two variables in the emerging economies countries, particularly in the Higher Education sector.

Under this context, this work aimed to analyze the relationship between psychological empowerment and job stress among teachers of Higher Education Institutions located in the central zone of Ecuador. A total of 200 tenured teachers from public universities located in Zone 3 of the country were surveyed using validated questionnaires. A theoretical framework was developed for the present study, allowing an empirical verification of the relationship between these two variables, mainly applying a structural equation model. The results indicate that only self-determination, one of the four dimensions of empowerment studied, has a significant negative relationship with job stress. The findings of this study contribute to filling the current knowledge gap, providing opportunities to develop and implement effective strategies and programs to reduce job stress among university teachers. These initiatives focus on enhancing teachers' well-being and mental health must consider the inherent particularities of the higher education sector in Ecuador.

Keywords: Psychological empowerment, meaning, competence, self-determination, impact, work stress, higher education institutions.

Resumen Ejecutivo

El empoderamiento psicológico y el estrés laboral han sido temas de gran preocupación para diversas organizaciones. Sin embargo, aunque estas teorías han sido ampliamente aplicadas en los países desarrollados, pocos estudios han contribuido a incrementar el conocimiento sobre la relación entre estas dos variables en países de economías emergentes, particularmente en el sector de la Educación Superior.

Bajo este contexto, el presente trabajo de investigación se centró en analizar la relación entre el empoderamiento psicológico y el estrés laboral en docentes de Instituciones de Educación Superior (IES) ubicadas en la zona central del Ecuador. Un total de 200 docentes titulares de universidades públicas ubicadas en la Zona 3 del país fueron encuestados mediante cuestionarios validados. Para el presente estudio, se desarrolló un marco teórico que permitió verificar empíricamente la relación entre estas dos variables, aplicando principalmente un modelo de ecuaciones estructurales. Los resultados indican que solo la autodeterminación, una de las cuatro dimensiones del empoderamiento estudiadas, tiene una relación negativa y significativa con el estrés laboral. Los hallazgos de esta investigación contribuyen a llenar el vacío de conocimiento existente, brindando oportunidades para desarrollar e implementar estrategias y programas efectivos para reducir el estrés laboral entre los docentes universitarios. Estas iniciativas que se enfocan en mejorar el bienestar y la salud mental de los docentes deben considerar las particularidades inherentes del sector de la educación superior en el Ecuador.

Palabras clave: Empoderamiento psicológico, significado, competencia, autodeterminación, impacto, estrés laboral, instituciones de educación superior.

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Introduction

This thesis is structured in two Chapters. The first Chapter presents the research paper accepted for publication, which is required to complete the degree of Doctor en Administración Estratégica de Empresas granted by the Pontificia Universidad Católica del Perú through its graduate school in business management, CENTRUM PUCP. The second Chapter includes the main conclusions and recommendations of the thesis. Therefore, Chapter 1 of this thesis includes the research paper entitled Psychological Empowerment and Job Stress in Higher Education Institutions in Ecuador which was accepted for publication by Journal Psychology Research and Behavior Management on November 11th, 2022 (see Appendix A). This journal is part of the Dove Medical Press and Taylor & Francis Group, and is indexed in Scopus in quartile Q2, Web of Science (WoS), UGC CARE, DOAJ, and PubMed.

This paper analyzed the relationship between the dimensions of psychological empowerment and job stress in tenured professors from public higher education institutions. In the last decades, the organizational structures and functions have dramatically changed to be adapted to new competitive demands (Orgambídez-Ramos et al., 2017). Consequently, these changes in the current organizational dynamics have caused negative impacts on various labor aspects, mainly by increasing job stress levels. As discussed by researchers, stress may be considered as a normal psychological and physical response to multiple situations experienced by individuals during their lifetime. However, when people perceive that overall demands exceed their personal and social resources, certain physical, mental or emotional tension may appear, interfering the capability of carrying out their daily duties (Pitt et al., 2018). Thus, even the integration of unprecedented technology development and globalization may have a direct effect on employees' working life, who may perceive higher levels of stress than before (Semerci, 2016).

In this context, job stress has been an important topic for research due to its consequences for workers' health and organizations. Savery and Luks (2001) indicated that the

impact of work-related stress is devastating, leading to reduce organizations' productivity, increase absenteeism rates, and generate additional health insurance costs and medical expenses for stress-related illnesses. For instance, approximately, \$200 billion in the United States, £63 billion in the United Kingdom, and \$15 billion in Australia are the cost generated for mid- and long-term stress conditions.

According to the World Health Organization (WHO, 2003), only 5-10 % and 20-50% percent of workers in developing countries and industrialized countries, respectively, have adequately access to occupational health services, particularly to treat work-related stress issues associated with professions with high job demands, including those related to the Education sector. Thus, teachers might experience burnout due to high job stress levels, negatively affecting their well-being and mental health (Kilinç & Yener, 2021; Wu, 2020). Furthermore, teachers might experience higher stress levels than administrative staff due to insufficient resources, job instability, poor management practices, reduced recognition at work, a growing number of students and associated new demanding roles and additional workloads, among other factors such as the permanent pressure on teachers to provide talented professionals capable of generating a greater impact on the economy and society (Afzal et al., 2018; Slišković & Seršić, 2011).

As noted by Kang and Sidhu (2015), higher education institutions (HEIs) are now commonly referred to as "stress factories" and teaching, especially at the university level, has been identified as one of the most stressful jobs. This fact is due to faculty staff constantly improve the quality of teaching with reduced or no support from authorities, leading to a dramatic increase in anxiety and stress levels during teaching activities.

To achieve a significant decrease in stress levels among members of an organization, many concepts and theories have been addressed. However, the concept of psychological empowerment has brought more attention from academics and managers since high levels of empowerment have been associated with low stress (Mostafa, 2017). Thus, empowerment may

help employees to grow intellectually and emotionally, ultimately overcoming issues in the workplace, and providing a competitive advantage (Priyadharshany & Sujatha, 2015). This criterion is shared by Ukil (2016), who indicated that the essence of employee empowerment is to help face all organizational challenges and increase service quality and worker satisfaction.

Under this perspective, the present research aimed to analyze the relationship between the dimensions of psychological empowerment and work stress of the tenured teachers of HEIs in Ecuador. The study is based on the Theory of Conservation of resources proposed by Hobfoll (1989), which assumes internal processes (self) to assess stressful situations and place them within a social and cultural context. Thus, by analyzing the overall environmental elements surrounding the individual, such as the available resources, the individual can deal with the demands triggering stress processes. According to this theory, stress occurs when the environment has caused or could cause the loss of a resource or prevent it from gaining (Hobfoll, 1989). Therefore, individuals try to accumulate more resources to face environmental demands and perceive less stress Hobfoll (2001).

Resources are defined as the objects, personal assets, conditions, or energies of a person who, in turn, determines their value, resulting in the prevention and counteraction of losses of such valuable resources (Diener & Fujita, 1995; Hobfoll, 1988). In addition, For Dewe et al. (2012), resources are also all elements considered essential to people that contribute positively to their well-being. Therefore, resources represent a crucial factor in perceived stress.

Thereby, according to the model of psychological empowerment proposed by Spreitzer (1995), competence becomes one of the dimensions needed by an individual to feel empowered. Thus, for DiClemente et al. (2009), individuals with high self-esteem and self-competence are less likely to be affected by the loss of resources compared with those affected by a negative self-evaluation and have to deal with certain adversities simultaneously.

Under this analysis, psychological empowerment has been recognized as an intrinsic motivator with the potential to generate more resources. As mentioned by Zimmerman (2000),

empowerment is a process that refers to those practices that focus on exercising control through intervention in decision-making and problem-solving in immediate environments and resource management. An essential assumption of the conservation of resources theory is that individuals strive to conserve and obtain new resources. Therefore, individuals will appraise any type of resources as long as they contribute to achieving greater resources (Hobfoll, 2001).

On the other hand, the present research analyzed the relationship between psychological empowerment and job stress in a context different from those previously applied in developed countries. First, this study was carried out in Ecuador, where no previous studies have been conducted concerning these two variables. Second, over the last two decades, various profound legal reforms, redesigns, and advanced methodologies for evaluating higher education quality have been successfully implemented, setting the standards for a future quality assurance system. All these reforms are still supported by the 2008 Constitution and the 2010 Organic Law of Higher Education. However, despite the significantly improved education quality, integrating new policies into the Ecuadorean educational system has caused teachers to adopt new demanding roles and additional workloads that may lead to unprecedented stress levels, particularly among teachers of public universities.

Based on this background, the target population was defined considering two selection criteria: (a) selected participants must come from public universities because those institutions have the largest number of tenured academics, and (b) institutions have to belong to the same geographical area. For this particular case, selected institutions are located in the highlands area of the central zone of Ecuador (Zone 3).

Regarding the unit of analysis, 1012 tenured professors were invited to participate in a face-to-face survey at their own institutions, attending at specific times and days proposed by researchers. From this number, a population sample of 200 participants was calculated following the criterion proposed by Jackson (2003) and Hair et al. (2016). The former suggested that the observed measurements and the number of indicators per factor must be

reliable because these factors have the potential to determine crucial aspects such as model adjustment. He also highlighted that a structural equation modeling (SEM) analysis requires a sample size of a minimum of 200 or more observations. Complementary, Hair et al. (2016) suggested that the sample size for structural equation modeling with partial least squares (PLS-SEM) is mainly estimated using the number of independent variables studied, significance level, and minimum R² value. For this study, when applying this criterion, a sample size of 113 observations was obtained when using four independent variables, a significance level of 5%, and a minimum R² value of 0.10. Thus, despite the fact that the calculated sample size required only 113 observations, data analyses were performed based on 200 observations collected for the present research.

Concerning the instruments applied in this study, the instrument proposed by Oispow (1998) was applied to measure job stress (see Appendix B). This instrument consisted of three dimensions: occupational stressors, psychological stress, and personal stress. Similarly, the model proposed by Spreitzer (1995) was used to evaluate psychological empowerment (see Appendix C). This construct encompasses four dimensions: meaning, competence, impact, and autonomy.

Although the instruments mentioned above have been widely used in previous studies because of their high-reliability level; each instrument applied in this study was subjected to further scales reliability tests. Additionally, convergent and divergent validity criteria were evaluated through confirmatory factor analysis.

The research design was descriptive, with a correlational technique allowing the assessment of the relationships between psychological empowerment and job stress dimensions. Thus, once the surveys were concluded, the resulting data from 200 valid questionnaires were tabulated and analyzed through PLS-SEM, mainly using the SmartPLS software. This selected technique works efficiently with small sample sizes and complex models.

The results showed a significant negative relationship between psychological empowerment and job stress (-0.124; p-value < 0.05). Thus, psychological empowerment significantly reduces job stress only when teachers perceive more autonomy, fewer limitations, and more freedom. No evidence was found concerning other relationships between the remaining components of psychological empowerment and job stress, as detailed as follows: meaning (-0.072; p-value >0.05), competence (-0.070; p-value > 0.05), and impact (0.055; p-value > 0.05). The findings are consistent with some other studies showing similar relationships in diverse settings and geographical locations.

Finally, the findings from this study may help directors and policymakers of Ecuadorean public higher education institutions to identify the underlying factors triggering stress processes, and subsequently developing and implementing appropriate and timely strategies and policies to deal with the effect of work-related stress on university teachers.

Chapter I: Research Article

The research paper entitled Psychological Empowerment and Job Stress in Higher Education Institutions in Ecuador was published in the Journal Psychology Research and Behavior Management (ISSN: 1179-1578), which is an international, peer-reviewed, open access journal associated with Dove Medical Press and Taylor & Francis Group.

In addition, the article was published on November 11th 2022 and was included in the Volume 15, pages 3297-3312, <https://doi.org/10.2147/PRBM.S381342>. The Psychology Research and Behavior Management is part of the Dove Medical Press and Taylor & Francis Group, and is indexed in Scopus in quartile Q2, Web of Science (WoS), UGC CARE, DOAJ, and PubMed.

Journal Psychology Research and Behavior Management complies with the reference style adopted by the American Medical Association (AMA), which, in turn, is based on the style developed by the International Committee of Medical Journal Editors in 1978 in Vancouver.

Disclaimer

I exonerate Centrum PUCP Business School for the methodological weaknesses found in this article, weaknesses that were not detected by the journal editor or by the reviewers to whom the journal editor sent the article for review. These weaknesses are not also the responsibility of those who reviewed the quality of the thesis in Centrum PUCP, in view that the article is presented here as it was published by the journal.

Psychological Empowerment and Job Stress in Higher Education Institutions in Ecuador

Purpose: Both psychological empowerment and job stress have been the subjects of great concern, studied mainly in developed countries. In emerging economies, few studies have contributed to the knowledge of the relationship between these two constructs. This study

analysed the relationship between the dimensions of psychological empowerment and job stress in tenured professors from public higher education institutions in Ecuador during 2019, providing insights for achieving better results regarding the productivity and well-being of teachers. This research seeks to bridge the knowledge gap concerning psychological empowerment and job stress within an academic context in an emerging economy.

Methods: In this quantitative study, a confirmatory model was proposed. Correlation analysis was used to investigate whether psychological empowerment dimensions are related to job stress. Data were collected from a sample of 200 tenured professors working at public universities located in Zone 3 of Ecuador in 2019. The instrument applied for psychological empowerment was proposed by Spreitzer, composed of four dimensions—meaning, competence, impact, and autonomy. For job stress, the Occupational Stress Inventory-Revised (OSI-R) instrument applied was proposed and revised by Osipow.

Results: Through structural equation modeling with partial least squares, it was possible to demonstrate that psychological empowerment reduces levels of job stress only when it is perceived that there is autonomy, fewer limitations, and more freedom. No evidence was identified that other components of psychological empowerment, such as meaning, competence, and impact, are related to job stress.

Conclusion: The results indicated that the model used to explain the relationship between these variables had weak predictive power. Furthermore, only one research hypothesis is accepted. Finally, these findings are corroborated and explained by the different perspectives presented by various authors.

Keywords: psychological empowerment, job stress, autonomy, freedom, professors, emerging economies

Introduction

Changing organizational dynamics and new competitive demands have led to alternations in organizational structures and functions.³ These changes have negatively affected

various work aspects, such as job stress. As mentioned by Pitt et al,⁴ stress is a normal, necessary, and unavoidable result of being alive and can be defined as physical, mental, or emotional tension. Additionally, it is a condition or feeling experienced when an individual perceives that the demands of environmental stimuli exceed their personal and social resources, which interferes with their ability to perform their functions normally.^{4,5}

Many concepts and theories have been addressed to reduce stress levels in the organization, such as psychological empowerment, which is commonly defined as an intrinsic motivation mechanism influencing employees' behavior and job performance.^{1,6,7} This concept has attracted the attention of academics and managers as high levels of empowerment are positively associated with low stress levels and increased workplace satisfaction.^{8,9} Thus, both job stress and psychological empowerment have become topics of significant interest to organizations. For instance, Boudrias et al¹⁰ and Joshi et al,¹¹ in their study conducted with workers exposed to stress, indicated that psychological empowerment could be considered a protective factor against burnout, which is conceptualized as a syndrome resulting from long-term chronic stress. Furthermore, according to Spreitzer and Mishra,¹² psychological empowerment improves the ability to cope with a stressful job.

With some exceptions,¹³⁻¹⁶ most research published in high-impact journals has focused on psychological empowerment and stress studies in the health sector.^{6,17-23} Hence, it is required to conduct more empirical studies using these two variables in other fields of knowledge, such as education.^{15,24} Studying job stress is becoming relevant in the academic environment of the public sector. As noted by Kang and Sidhu,²⁵ higher education institutions are commonly called "stress factories".

Thus, teaching, especially at the university level, has been identified as one of the most stressful jobs because faculty members improve the quality of teaching with reduced or no support, leading to a drastic increase in anxiety, burnout, deterioration of mental health, and stress levels.²⁶ Additionally, Afzal et al²⁷ identified that university teachers face a higher

stress level than administrative staff because of insufficient resources, bad management practices, work overload, low recognition, and job insecurity, among other factors.

Despite the progress in academic literature related to stress assessments, there is still a pronounced debate on the relationship between psychological empowerment and job stress. According to Conner and Douglas,²⁸ when employees have high autonomy in their job (related to the self-determination factor of psychological empowerment), they may experience a lack of direction and excessive responsibility, increasing their stress levels. Conversely, employees with high levels of meaning (the first component of psychological empowerment) tend to generate a stronger bond with their work and are highly involved.²⁹

It is imperative to continue analyzing whether the job stress faced by university teachers could be reduced through psychological empowerment, a relationship that, to the authors' knowledge, has been poorly addressed in previous studies within the university context, mainly in developing countries. In this context, an overall research question guiding this study is raised: What is the relationship between psychological empowerment and job stress among university teachers?

Hence, further studies on the empowerment of teachers from geographic regions with cultural heterogeneity, contrasting academic workplaces, and varied economic growth are required.^{3,30-32} These new studies may help bridge the knowledge gap regarding the relationship between psychological empowerment and job stress in higher education institutions, particularly in developing countries, such as Ecuador.

In this academic context, Ecuadorean higher education institutions have undergone long- evaluation and accreditation processes to set standards for a future quality assurance system.^{33,34} Thus, various profound legal reforms, redesigns, and advanced methodologies for evaluating higher education quality have been successfully implemented over the past decade. These reforms are supported by the 2008 Constitution and the 2010 Organic Law of Higher Education.^{35,36}

Despite the most rapidly improved education quality, integrating new policies into the Ecuadorean educational system has caused teachers to adopt new demanding roles and additional workloads that may lead to higher stress levels.³⁷ Thus, increasing stress levels may negatively affect their productivity, quality and amount of services offered, work performance, and relationships among teachers, students and colleagues, as previously described for other educational levels in countries undergoing similar educational policies and organizational changes.³⁸⁻⁴²

In addition, at least in public educational institutions, due to their limited resources, no attempts have been made to support studies to reduce stress levels through planned coping strategies, ie, psychological empowerment. These strategies frequently help teachers to face all persistent educational challenges, changes, and uncertainties.^{43,44}

Therefore, considering that previous studies findings show several contradictions regarding psychological empowerment and job stress, which has created a significant knowledge gap,^{6,28,45} as well as no previous studies have been conducted in Ecuador concerning those two variables; the present study aims to validate the conceptual framework proposed by Spreitzer¹ on psychological empowerment and its relationship with job stress in public university teachers of Ecuador. This research will provide valuable insights into how psychological empowerment could become a personal resource to reduce job stress levels caused by the accelerated changes in higher education institutions, particularly public universities.

Furthermore, the study of this particular population linked to teaching activities is crucial to understanding how the increased work pressure-related stress in the academic environment affects university teachers' emotional and psychological health.⁴⁶ Finally, the potential outcomes from the study may help develop effective strategies and initiatives that significantly decrease stress levels in educational environments, consequently improving employees' well-being and lifestyle. In addition, these initiatives may help avoid subsequent conflicts, ie, work-family, occurring when employees' productivity and job performance have

been compromised due to increased stress levels.^{44,47,48}

Literature Review and Hypotheses

Psychological Empowerment

Rappaport⁴⁹ mentioned that empowerment expresses a belief of power in people who determine their destiny and are part of their community. While Conger and Kanungo,⁵⁰ based on Bandura's theory,^{51,52} defined empowerment as an enabling process that increases feelings of self-efficacy among members of an organization. Additionally, these authors indicated that empowerment is a type of intrinsic motivation, which is consistent with the studies of Thomas and Velthouse,⁵³ who conceptualized empowerment as the increase in intrinsic task motivation.

Empowerment has two interpretations: first, in the psychological sense of personal influence and control, and second, concerning social influence, political power, and legal rights.⁴⁹ Maynard et al⁵⁴ mentioned that empowerment has two conceptions: structural and psychological. Individual empowerment is considered psychological and organizational as structural.⁵⁵

Based on this, the concept of psychological empowerment originated in the late 90s was defined as an internal motivating factor that reflects the active role of employees in the organization, which stimulates the behavior and performance of individuals. Due to the great relevance of this subject, researchers and managers have oriented their studies on this field.^{56,57} Thus, based on the theoretical model of empowerment proposed by Thomas and Velthouse,⁵³ Spreitzer¹ developed and validated the empowerment construct, referencing the four dimensions proposed by these authors regarding the evaluation of task performance (impact, competence, meaning, and self-determination). Then, these dimensions were used to measure psychological empowerment and determine employee orientation to their role at work.

Consequently, psychological empowerment is a concept that incorporates different degrees of an individual's perception, as follows. The first was meaning—"the sense of purpose or personal connection with their work goal" or the perception of correspondence

between their work's objective and expectations.¹ Second, competence or self-efficacy relates to the employee's perception of their abilities and capacities to execute their work effectively. Additionally, competence refers to confidence in their abilities to execute their work. Third, self-determination refers to the freedom to develop their work and make decisions or have the opportunity to initiate or regulate actions. Finally, impact refers to the ability to positively and significantly contribute to the organization through their work—the extent to which a person could influence an organization's strategic, administrative, or operational results.¹ Based on this, psychological empowerment refers to the psychological experience of empowerment.¹⁷

Furthermore, empowerment includes giving employees high autonomy by sharing relevant information and giving them control over factors that affect job performance.⁵⁸ Empowerment is a strategic process based on the relationship between the organization and the employees by increasing trust, responsibility, authority, and commitment to providing better customer service.⁵⁹ For Fan et al,⁶ psychological empowerment is a cultural, social, or psychological fact whereby people have control, satisfy their needs, and make their own decisions.

Job Stress

Currently, managing job stress is a topic of significant interest within organizations. Semerci⁶⁰ defined job stress as all work-related difficulties that create a physical and psychological response. Known as the disease of the century, this has been considered in recent decades as the second most frequent health problem related to work, affecting 28% of employees in European Union countries.⁶¹ According to Jamal,⁶² despite the efforts made by organizations to combat stress, job stress will continue to be an important concern in the work world because of insufficient knowledge of its causes in various situations. Florea and Florea⁶¹ mentioned that job stress affects not only employees but also the organization and national

economies, forcing them to allocate more financial resources.

In the academic environment, Yildirim⁴² stated that working under stress and tension damages the quality and quantity of services offered by teachers, which can affect their students and colleagues. This is confirmed by Greenberg et al⁶³ who identified that teachers with more stress are less likely to create a conducive environment within the classroom. Stress in teachers not only affects the well-being and health of teachers but also causes job dissatisfaction, burnout, poor performance, and lack of commitment. Increased stress in the workplace not only threatens the individual but is also detrimental to the organization.⁶⁴

Cabanach⁶⁵ classified stressors into intrinsic factors related to the job, interpersonal relationships, professional progress, and the organization and work environment. For Pearlin,⁶⁶ one of the chronic stressors was role overload, which indicates that the demand exceeds the person's capacity. Currently, several instruments help determine job stress because of the significant interest in studying this complicated phenomenon, with strong influence and prevalence in different places. Some instruments evaluate organizational elements and factors regarding the task, some measure the resources and capacities of employees, and others incorporate both aspects.⁶⁷

Psychological Empowerment and Job Stress

In various areas, some studies have revealed that mediating effects of psychological empowerment help reduce work-related stress and burnout, enhance commitment, and decrease turnover and absenteeism rates among staff.^{13,20,22,68-70} However, other studies show a direct and strong negative relationship between work stress and some psychological empowerment dimensions. For instance, the meaning and self-determination toward their job may be compromised when employees experience high job stress levels, as discussed by other researchers.^{13,45,68,71,72}

Although the findings of previous studies clearly explaining the role of psychological

empowerment, the literature review indicates contradictions in studies on the relationship between psychological empowerment and job stress. Spreitzer et al²⁹ in their study of the dimensions of psychological empowerment and its relationship with job satisfaction and psychophysiological results of job stress demonstrated that stress at work was negatively related to meaning and competence (dimensions of psychological empowerment). However, self-determination and impact (dimensions of psychological empowerment) were positively related to job stress.

Contrary to the studies of Spreitzer et al,²⁹ Siegall and Gardner⁷³ did not identify any relationship among the competence dimension, job satisfaction, and stress. Additionally, Holdsworth and Cartwright⁷⁴ indicated that psychological empowerment is not related to any mental or physical health dimension. Based on this, Orgambidez- Ramos et al³ stated that further research is necessary regarding the differential impact between job stress and psychological empowerment on employee satisfaction. Özbas and Tel,⁷⁵ in their study conducted with nurses, indicated that psychological empowerment made it possible to reduce burnout scores (a type of stress); however, the authors concluded that it is necessary to validate the findings in another population and through a longitudinal study.

Research Hypotheses

Despite contradictory results in the relationship between psychological empowerment and job stress, recent studies in other professional settings support the negative and significant relationship between both variables, indicating that high levels of psychological empowerment decrease the effects of job stress.^{45,70,76-78} Thereby, given the impact of psychological empowerment in various professions, it can be assumed that all psychological empowerment dimensions may also function as mechanisms to reduce work stress in higher education institutions. Thus, the following research hypotheses were proposed to analyze the relationship between these variables, considering each of the dimensions of psychological empowerment:

H1: The meaning of work has a negative and significant relationship with job stress.

H2: The competence to do the job has a negative and significant relationship with job stress.

H3: Self-determination at work has a negative and significant relationship with job stress.

H4: The impact of work has a negative and significant relationship with job stress.

Material and Methods

Sample and Data Collection

This study was conducted at five Ecuadorean public universities between August and mid-December 2019, corresponding to the first period of the academic year. These universities were selected based on these conditions: a) public institutions having the largest number of tenured academics, and b) institutions located in a similar geographical area, for this case, the central zone of Ecuador (Zone 3). Thus, through respective academic departments of all universities involved, 1012 tenured professors were invited to participate in a face-to-face survey, attending at specific times and days proposed by researchers. Thus, all participants were recruited randomly based on their availability to partake in the survey.

In total, 200 self-administered paper-and-pencil questionnaires were distributed among all teachers accepting to continue with the survey. Data were collected until a sample of 200 tenured professors was attained. As a result, 200 questionnaires with valid responses were collected, leading to an effective response rate of 100%. Furthermore, all 200 valid questionnaires were used for a structural equation modeling analysis that requires a sample size of a minimum of 200 or more observations, as discussed by Jackson.⁷⁹

The maximum number of 200 questionnaires used in this survey was strictly linked to the instrument publisher's permission. Thus, for this research study, reproduction of up to 200 copies of the Spanish OSI-R was allowed under special permission from the Publisher-Psychological Assessment Resources, Inc., 16,204 North Florida Avenue, Lutz, Florida 33,549, from the Occupational Stress Inventory-Revised by Samuel H. Osipow, Ph.D., Copyright, 1981, 1983, 1987, 1998 by Psychological Assessment Resources, Inc.^{2,80} Further

reproduction was prohibited without permission from PAR, Inc., which specified that no extra copies of the instrument could be made. Therefore, in accordance with the licensing agreement, a copy of the instrument cannot be provided with this article.

Informed consent, explaining study objectives and other relevant information, was provided to all participants prior to answering self-administered paper-and-pencil questionnaires. Furthermore, through this informed consent, researchers emphasized to respondents that all information collected is confidential and anonymous, and they also had the right to refuse to answer any particular question.

Although the indicated questionnaires are the most widely used instruments in previous studies because of their acceptable level of reliability,⁸¹ In this study, each of these was subjected to reliability tests and convergent and divergent validity; the last two were subjected to confirmatory factor analysis.

Method

The study had a quantitative approach with deductive logic because it started from widely accepted theories applied in a particular context. A cross-sectional design was also applied as the collection of primary information was conducted at a specific period in 2019.

Furthermore, a model subject to confirmatory factor analysis was proposed. The research design was descriptive with a correlational technique to investigate whether psychological empowerment dimensions are related to job stress. Therefore, once the surveys were conducted, the data obtained were tabulated and analyzed using structural equation models with partial least squares (PLS-SEM) using the SmartPLS software. This technique works efficiently with small sample sizes and complex models. Furthermore, it does not make assumptions about the distribution of the data.⁸² Thus, it was possible to check the validity of the measurement models corresponding to each construct proposed and identify the relationship between the variables—meaning, competence, self-determination, and impact—corresponding to psychological empowerment, and the dependent variable job stress.

Using the software mentioned above, the model was built based on the hypotheses proposed, as shown in Figure 1. Subsequently, data were entered, and corresponding analyses of the obtained results were carried out, as detailed in the following sections.

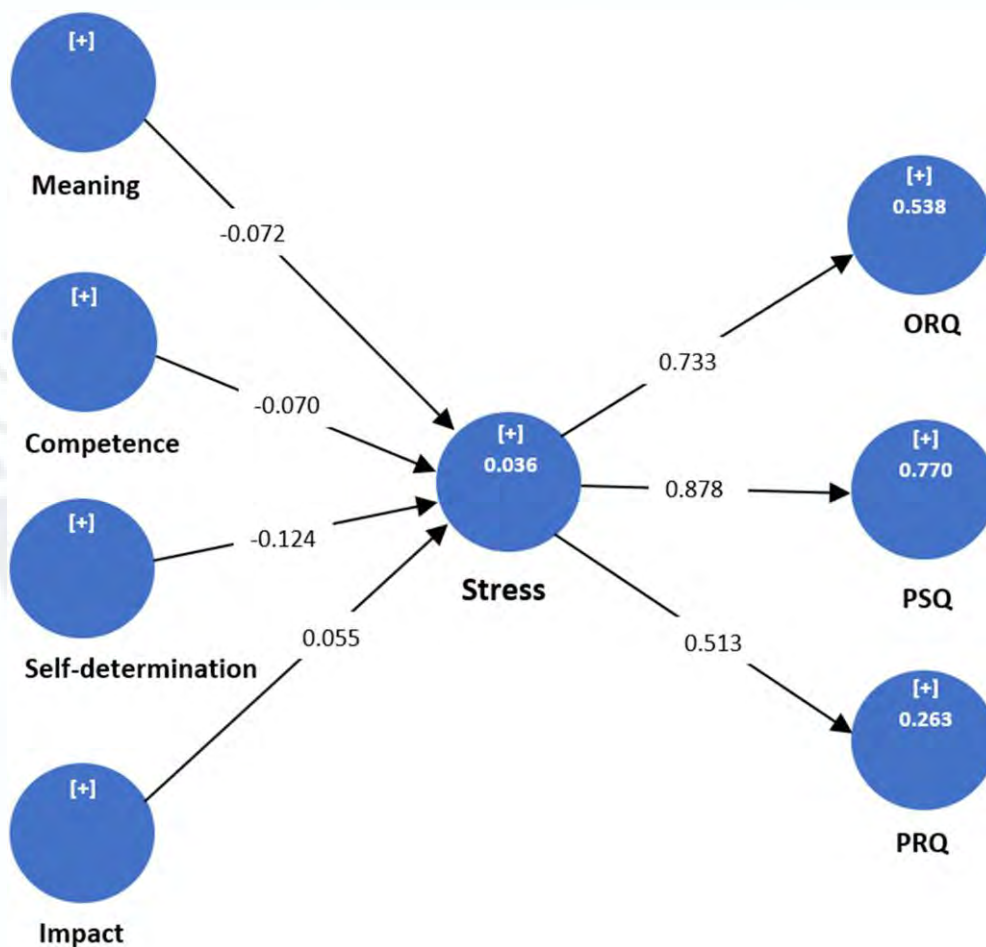


Figure 1 Structural model.

Abbreviations: ORQ, occupational roles questionnaire; PSQ, personal stress questionnaire; PRQ, personal resources questionnaire.

Instrumentation

Psychological empowerment was evaluated using the instrument proposed by Spreitzer,¹ who created a multidimensional questionnaire with subscales based on three criteria: (a) one-dimensional, (b) common application format to facilitate administration (a seven-point Likert

scale), and (c) focused on personal experience rather than the description of the environment. Based on the aforementioned, Spreitzer¹ designed an instrument composed of four dimensions: meaning, competence, self-determination, and impact; each dimension is composed of three items.⁶⁷ All measures are shown in Table 1.

Table 1 Spreitzer's Psychological Empowerment Scale

Statement	Punctuation						
Meaning							
1. I am confident about my ability to do my job	1	2	3	4	5	6	7
2. My work activities are personally valuable	1	2	3	4	5	6	7
3. I have significant autonomy to determine how I do my job	1	2	3	4	5	6	7
Competence							
4. My impact on what happens in my department is large	1	2	3	4	5	6	7
5. My job activities are personally significant to me	1	2	3	4	5	6	7
6. I have a great deal of control over what happens in my department	1	2	3	4	5	6	7
Self-determination							
7. I can decide by myself how to go about doing my work	1	2	3	4	5	6	7
8. I have a significant possibility for independence and freedom in how I do my job	1	2	3	4	5	6	7
9. I have mastered the necessary skills to do my job	1	2	3	4	5	6	7
Impact							
10. The work I do is meaningful to me	1	2	3	4	5	6	7
11. I have significant influence over what happens in my department.	1	2	3	4	5	6	7
12. I am self-assured about my capabilities to perform my work activities	1	2	3	4	5	6	7

Note: Listed below, there are several self-orientations that people may have regarding their jobs. Using the following scale, please indicate the extent where you agree or disagree with each one describes your self-orientation. 1= Very strongly disagree, 2= Strongly disagree, 3=Disagree, 4= Neutral, 5= Agree, 6= Strongly agree, 7= Very strongly Agree.

To measure job stress, a revised version of the instrument called the revised edition of the OSI-R occupational stress inventory proposed by Oispow² was used, which comprises three dimensions: occupational stressors, psychological stress, and coping resources. A total number of 140 items were evaluated using a five-point Likert scale.

Six subscales measured the domain of occupational stressors called the Occupational Roles Questionnaire (ORQ). These scales were as follows: (a) occupational overload (OR), which evaluated the degree to which occupational demands exceeded resources (personal and workplace) and the extent to which a person could accomplish tasks at work; (b) role

insufficiency (RI), which measured the level to which a person's training, education, skills, and experience were aligned to the demands of the job; (c) role ambiguity (RA), which assessed the extent to which job prospects and assessment elements, in the workplace, were understood by employees; (d) role boundaries (RB), which evaluated the extent to which a person experienced role demands and conflicting loyalties in their work environment; (e) role responsibility (R) to study the level at which an individual had or thought they had a considerable responsibility for the performance or well-being of another worker; and (f) physical environment (PE), which assessed the level at which an employee was subject to higher levels of environmental toxicity or extreme physical situations.

The domain of psychological stress was measured through a Personal Stress Questionnaire (PSQ), which consisted of four subscales. They were as follows: (a) vocational stress (VS), which assessed the level at which a person had problems with the effectiveness of their work and measured the attitudes directed towards work; (b) psychological stress (PSY), which evaluated the degree to which a person perceived psychological and/or emotional problems; (c) interpersonal stress (IS), which assessed the level at which a person experienced a disruption in interpersonal relationships; and (d) physical stress (PHS), which assessed the level at which a person complained regarding physical illnesses or poor self-care practices.

The Personal Resources Questionnaire (PRQ) was used to evaluate the coping resources, which comprised four subscales: (a) recreation (RE), which evaluated the level at which a person was satisfied and relaxed in frequent recreational activities; (b) self-care (SC), which assessed the level at which a person normally performed personal activities that minimize or calm chronic stress; (c) social support (SS), which assessed the level at which a person felt support and help from their peers; and (d) radiation/cognitive coping (CR), which assessed the level at which a person had and used cognitive skills to cope with job stress.⁶⁷

Results

Characterization of the Participants

Of the 200 valid surveys, 60% were male, and 40% were female. Most were in the age range of 40–49 years (36%), followed by age ranges of 30–39 years (29.5%) and 50–59 years (23.5%). Regarding the knowledge area, 25.5% reported that their areas were engineering, industries, and construction, 24.5% from administration, 23% from education, and 21% from sciences. To a lesser extent, the agriculture, veterinary medicine, and services areas were reported.

Confirmatory Factor Analysis of the Measurement Model and Reliability Analysis

The composite reliability index was calculated to determine the reliability of the scales. This index reflects the relationship between explained variance and total variance.⁸³ Table 2 shows the values obtained for each construct. In all cases, the composite reliability index obtained was higher than 0.70; therefore, they could be considered reliable scales.

Table 2 Reliability of the Scales of Each Latent Variable

Construct	Composite Reliability Index	Number of Items
Psychological empowerment		
Meaning	0.96	3
Competence	0.95	3
Self-determination	0.94	3
Impact	0.74	3
Job stress	0.73	14
Roles occupations	0.70	6
Personal stress	0.78	4
Personal resources	0.70	4

Convergent and Discriminant Validity

A model presents convergent validity when the standardized estimated coefficients are more than or equal to 0.50, although the ideal is that they are more than 0.70.⁸⁴ Table 3 shows the values obtained, and as indicated, most of the standardized parameters are more than 0.50, which allows us to conclude that the convergent validity criterion is met. Furthermore, for the cases where the standardized parameters were less than 0.70, the composite reliability index

was more than 0.70. Therefore, it can be concluded that the scales are reliable.

Table 3 Convergent Validity of Subconstructs and Items

Subconstructs and Items	Standardised Parameter	AVE
Psychological empowerment		0.902
Meaning		
Meaning 3	0.951	
Meaning 2	0.961	
Meaning 1	0.931	
Competence		0.874
Competence 3	0.943	
Competence 2	0.968	
Competence 1	0.943	
Self-determination		0.847
Self-determination 3	0.910	
Self-determination 2	0.931	
Self-determination 1	0.920	
Impact		0.520
Impact 3	0.544	
Impact 2	0.528	
Impact 1	0.992	
Job stress		0.591
Occupational roles		0.574
PE	0.763	
R	0.533	
RB	0.581	
RA	0.599	
RI	0.508	
OR	0.546	
Personal stress		0.570
PHS	0.760	
IS	0.60	
PSY	0.739	
VS	0.636	
Personal resources		0.552
RC	0.430	
SC	0.610	
SS	0.514	
RE	0.824	

Abbreviations: PE, physical environment; R, role responsibility; RB, role boundaries; RA, role ambiguity; RI, role insufficiency; OR, occupational overload; PHS, physical stress; IS, interpersonal stress; PSY, psychological stress; VS, vocational stress; RC, radiation/cognitive coping; SC, self-care; SS, social support; RE, recreation.

The value of the average variance extracted (AVE) is further indicated, which allows the evaluation of the convergent value. An AVE value of 0.50 or more indicates that, on average, the construct explains more than half of the variance of its indicators, fulfilling the convergent validity criterion.

Once the convergent validity of the model was verified, the discriminant validity of the measurement model was analyzed; the procedure proposed by Hair et al⁸⁴ was used. These authors established that the estimate of the AVE for two factors must be more than the square of the correlation between the two factors. The results presented in Table 4 corroborate that the estimated AVE value of each construct is more than the square of the correlation between each pair of latent variables. Therefore, the discriminant validity criterion of the model is met.

Table 4 Discriminant Validity Analysis

Exogenous Variables	Job Stress	Meaning	Competence	Self-Determination	Impact
Job stress					
Meaning	0.153				
Competence	0.433	0.656			
Self-determination	0.164	0.505	0.487		
Impact	0.105	0.619	0.698	0.540	
AVE	0.591	0.902	0.874	0.847	0.520

Abbreviation: AVE, average variance extract.

Structural Model

This model was built by specifying the job stress variable as a second-order model, while the psychological empowerment model is specified as a first-order model, depending on the hypotheses raised. Figure 1 shows the structural model tested, which was developed using the SmartPLS software.

According to Hair et al⁸² the structural model must be evaluated according to the following criteria: (a) analysis of collinearity in the set of predictor variables through the variance inflation factor (VIF), whose value must be more than 0.20 and less than 5; otherwise, consider eliminating constructs or merging predictor variables; (b) use bootstrapping to evaluate the significance of the regression coefficients, where the recommended minimum number of bootstrap samples is 5000; and (c) the R² value is analyzed. Therefore, PLS-SEM aims to maximize the R² values of the endogenous latent variables in the path model. While the exact interpretation of the R² value depends on the particular model and research discipline, in general, R² values of 0.75, 0.50, or 0.25 for the endogenous construct can be described as substantial,

moderate, and weak, respectively.

Based on this, the results shown in Table 5 indicate that the VIF values are within the recommended limits. Therefore, it is concluded that the collinearity between the predictor constructs is not a critical issue in the structural model and can be continued with the analysis. Conversely, the R² value obtained was 0.036, which is less than the recommended minimum of 0.25. Thus, it is concluded that the model fails to predict the variability of the dependent variable explained by the independent variable.

Table 5 VIF Values of the Exogenous and Endogenous Variables

Exogenous Variables	VIF
Impact	2.206
Competence	2.922
Self-determination	1.515
Meaning	2.516

Abbreviation: VIF, variance inflation factor.

Hypotheses Testing

To verify the proposed hypotheses, a bootstrapping algorithm with a minimum number of samples (5000) was used. These criteria were established by Hair et al⁸² to evaluate the significance of the regressions obtained between the latent variables. Table 6 shows the results obtained.

Table 6 Regression Parameters of the Structural Model

Relationships Between Latent Variables			Regression Coefficient	p-value
Job stress	<—	Meaning	-0.072	0.500
Job stress	<—	Competence	-0.070	0.670
Job stress	<—	Self-determination	-0.124	0.033
Job stress	<—	Impact	0.055	0.622

The findings indicate that the regression estimate between meaning and job stress is negative and not significant (-0.072; p-value > 0.05), as well as the estimate between competence and job stress (-0.070; p-value > 0.05), which leads to the rejection of H1 and H2. Conversely, the regression estimate between self-determination and job stress is negative and significant (-0.124; p-value < 0.05), allowing us to accept H3, while the estimate between impact

and job stress is positive and not significant (0.055; p -value > 0.05), leading to the rejection of H4.

Discussion

Psychological empowerment is defined as a form of intrinsic motivation that is manifested through four cognitive factors: (a) meaning (value of work), (b) competence (individual belief in the ability to perform their work), (c) self-determination (the ability to make decisions regarding the organization), and (d) impact (influence of their work on the results of the organization).¹ In this research, the relationship between psychological empowerment and job stress was analyzed using structural equation models in a sample of tenured professors from public higher education institutions.

The results allowed us to accept only H3, as the relationship between self-determination has a negative and significant relationship with job stress. These findings partially corroborate the results found by Permarupan et al²² in Malaysia, indicating that psychological empowerment has a negative and significant influence on burnout, which is conceptualized as a mental state developed in a work environment with continuous stress due to job demands. Similarly, other studies conducted in different work settings in China and India corroborate that psychological empowerment has a significant negative relationship with work burnout and perceived stress.^{45,68}

On the other hand, the findings of the present study contradict studies such as the one developed by Spreitzer et al,²⁹ who demonstrated that stress at work was negatively related to meaning and competence. Thus, individuals possessing these two characteristics and the necessary skills can avoid job stress in organizations. Moreover, these authors also demonstrated that self-determination and impact have a positive relationship with job stress, which also contradicts the results of this research, as the relationship between impact and job stress is positive but not significant.

The results partially contradict the findings of Mostafa,⁸ who identified that

psychological empowerment is associated with reduced stress levels. Likewise, Edwards and Cooper⁸⁵ stated that when employees have high levels of correspondence with their jobs, their psychological well-being improves. This correspondence is related to the “meaning” dimension of psychological empowerment. Additionally, when individuals feel confident in their competence to handle a situation (second dimension of psychological empowerment), they will perceive a task as challenging rather than threatening or stressful.⁸⁶ This is contrary to what was identified in this research because the relationship between competence and stress was positive and not significant.

Regarding self-determination, Mostafa⁸ stated that when employees perceive a lack of autonomy, they would feel restricted, leading them to experience high levels of stress, which is corroborated by the findings of this investigation. In other words, when autonomy, competence and relatedness are met in the workplace, higher levels of commitment, job satisfaction, and employee motivation can be observed among organization members.^{76,77} This partially corroborates the findings of Marshall,⁸⁷ who demonstrated that empowerment does not influence job stress. The contradictions detected in the academic literature may be explained by the context in which the research was conducted, as detailed in the next section.

On the other hand, Education is globally recognized as a critical factor for the knowledge economy, and evaluating its quality is one of the primary objectives for guaranteeing the sustainable development of society in general.⁸⁸ Therefore, higher education institutions continuously face new challenges in guaranteeing and certifying the quality of the education they impart while complying with the standards established by the control institutions.⁸⁹ In this context, in the last decade in Ecuador, several legal reforms, redesigns, and methodologies for evaluating the quality of higher education were implemented to improve the education system and guarantee educational quality.⁹⁰ However, applying new evaluation models has brought profound organizational changes and demands for teachers, who had to adopt new roles and adapt their capacities to new challenges. These changes have generated an additional burden

on their work performance, leading to higher stress levels, as observed in other educational levels.⁶⁸

Furthermore, the research was conducted in public higher education institutions with certain peculiarities, including government regulations and restrictions, and a rigid organizational structure.⁹¹ This could prevent from implementing policies or additional strategies for psychological empowerment to reduce stress levels. These statements could explain why the structural model obtained a weak predictive power and may be inadequate in explaining this phenomenon where the research was conducted.

This is corroborated by Doss et al⁹² for whom most university professors in emerging economies experience stress because of the organizational structure and the climate. Therefore, interventions focused on improving the work environment could effectively reduce the stressors that arise from the organizational structure and the climate of the university departments where the professors work. Furthermore, university professors face the challenge of work overload because of understaffing. Under the pressure of the work environment, the organization and the activities they develop tend to manifest an imbalance between their abilities and demands.⁹³

Implications

To the best authors' knowledge, this is the first national empirical research providing valuable insights into the specific role of psychological empowerment in public institutions, where the prevalence of high stress levels is directly linked to drastic changes in organizational structures, policies, and educational practices.⁴³ Thus, this study provides further evidence to the limited but growing literature regarding the relationship between psychological empowerment and job stress among university professors from a developing country, such as Ecuador.

Worth mentioning that the findings of the present study are not conclusive for all psychological empowerment dimensions. Hence, they should not be generalized for other universities or organizations, mainly due to research's limitations, such as target group (only

tenured professor), sample size (limited to 200 observations), geographical area (only Zone 3), type of university involved (public institutions), cross-sectional design (specific period in 2019), etc. Furthermore, as the research was conducted in Ecuador, a developing country, the findings may differ from those conducted in other countries with contrasting cultural, political, and economic development. The latter features are highly relevant when comparing outcomes from different geographical regions, as discussed by various authors.^{45,94}

Despite the limitations acknowledged, results from the present study pave the way for further research on similar studied variables in other target groups (ie non-academic staff) and different educational settings.¹³ Thus, future studies will allow comparisons between findings from previous studies (ie pre-pandemic conditions) and during the pandemic.⁴⁴ Consequently, all this valuable information may help develop organizational interventions programs and policies focused on identifying the underlying factors generating higher tension levels,⁹⁵ and subsequently implementing supportive workplace practices to enhance employee well-being and mental health in educational environments,^{16,41} particularly through the application of psychological empowerment considered as an effective mechanism to reduce job stress and increase optimism and commitment.⁷⁰

Finally, Gagné et al⁷⁷ stated that increasing levels of psychological empowerment in the workplace, particularly self-determination, requires that autonomy, competence, and relatedness are met.⁷⁷ However, the findings of present research indicate that job stress levels can also be reduced when perceived autonomy is achieved. This suggests that high levels of psychological empowerment may be achieved when at least one of the three psychological needs is met, leading to higher levels of commitment to organizational activities among motivated and satisfied academic staff, ultimately enhancing individual and institutional performance, achievements, and effectiveness.^{42,76,96,97} These results suggest that more attention and research are required from professionals, scholars, and policymakers to address work-related stress issues, particularly in professions with high job demands, as those related to the Education sector.

Conclusion

This research aimed to analyze the relationship between the dimensions of psychological empowerment and job stress of university professors of public higher education institutions located in an emerging economy, such as Ecuador.

Through structural equation modeling with partial least squares, it was possible to demonstrate that psychological empowerment, specifically through self-determination, reduces levels of job stress only when it is perceived that there is autonomy, fewer limitations, and more freedom. However, no evidence was identified that other components of psychological empowerment, such as meaning, competence, and impact, are related to job stress.

The results indicated that the model used to explain the relationship between these variables had weak predictive power. Therefore, only one research hypothesis was accepted. These findings are corroborated and explained by the different perspectives presented by various authors.

From an academic context, research findings show that the proposed conceptual model allows analyzing the relationship between psychological empowerment and work stress in teaching performance. Thus, these results may help directors and policymakers of Ecuadorean public higher education institutions to identify specific aspects generating higher tension levels among teachers. Consequently, outcomes provide opportunities to define appropriate and timely strategies to deal with the effect of work stress on university teachers, considering the inherent particularities of the higher education sector in Ecuador.

Conversely, given that the study was conducted in the public university sector, it is recommended that future research expand the study population to private educational institutions to obtain a broader view of the relationship between these variables and possibly a better predictive power of the structural model. Finally, future research should apply longitudinal research designs to overcome the potential limitations of a cross-sectional approach applied in the present study.

Data Sharing Statement

All relevant data are within the paper. Further data associated with OSI-R required special permission from the Publisher, Psychological Assessment Resources Inc.

Ethics Statement

This study was conducted in line with the recommendations of the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association (APA). Both the Quality Control Panel and the Research Committee from Católica Graduate Business School of Pontificia Universidad Católica del Perú (CENTRUM-PUCP) previously reviewed and approved the current research, exempting it from ethical approval as it was a survey-based. Only standard procedures and measurement instruments were used, and detailed information on study objectives was given to all participants prior to answering the questionnaires. All respondents gave consent in accordance with the Declaration of Helsinki principles, and participated in the survey voluntarily and willingly. All participants' information is confidential and anonymous.

Acknowledgments

The authors would like to thank all the survey participants who willingly contributed to this research study.

Author Contributions

All authors made significant contributions to the conception, study design, acquisition of data, analysis, and interpretation of data; took part in drafting the article, revising it critically; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

Funding

This work contributes to IJ's PhD study program at the Pontificia Universidad Católica del Perú, and is funded by Universidad Técnica de Cotopaxi – Ecuador. The funder had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Disclosure

The authors report no conflicts of interest in this work.

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Chapter II. Conclusions and Recommendations

Conclusions

The main objective of this study was to analyze the relationship between the dimensions of psychological empowerment and job stress among tenured university teachers in an emerging economy country, such as Ecuador.

Thus, by applying a structural equation model with partial least squares (PLS-SEM) was possible to demonstrate that dimensions meaning (-0.072; p-value >0.05) and competence (-0.070; p-value >0.05) had a negative and not significant relationship with job stress. Consequently, these estimated values led to the rejection of the first (H1) and the second (H2) research hypotheses, respectively. In contrast, the self-determination dimension and job stress showed a significant negative relationship (-0.124; p-value < 0.05), allowing us to accept the third research hypothesis (H3). Finally, the impact dimension showed a positive and not significant relationship with job stress (0.055; p-value >0.05), resulting in the rejection of the fourth research hypothesis (H4).

These findings partially corroborate the results found by Permarupan et al. (2020) in Malaysia, indicating that psychological empowerment has a negative and significant impact on burnout. The latter is conceptualized as a mental state developed within stressful work environment with high job demands. Similarly, other studies carried out in different work settings in China and India also corroborate that psychological empowerment has a significant negative relationship with perceived long-term stress and work-related burnout.

In contrast, the findings of the current research contradict the results found by Spreitzer et al. (1997), who demonstrated that work stress has a negative relationship with meaning and competence dimensions. This fact may indicate that individuals possessing features associated with these two dimensions alongside appropriate skills can avoid job stress in organizations. Additionally, these authors showed that self-determination and impact dimensions had a

positive relationship with job stress, differing from the results of this research, where impact and job stress are positively related; however, that relationship was not statistically significant.

The contrasting evidence found in this study compared with the results of other studies may be partially explained by the fact that the current research was conducted in Ecuador, a developing country with particular socio-cultural values strongly associated with the propensity for dependence and distance from power. These two features can generate meaningful behavioral differences between countries (Tripathi & Bharadwaja, 2018). For instance, western nations with greater economic resources combine less power distance with individualism, while countries with fewer financial resources, such as Ecuador, are collectivists showing greater power distances (Hofstede, 1986). Furthermore, the sector or setting where the present study was conducted may be a crucial factor for the contrasting results found. For instance, most studies on psychological empowerment and job stress have been conducted in health and other services sectors (Holdsworth & Cartwright, 2003) rather than in the higher education sector.

Finally, to the best author's knowledge, this is the first national empirical research providing valuable insights into the specific role of psychological empowerment in public educational institutions, where the prevalence of high-stress levels is associated with substantial changes in policies, educational practices, and organizational structures. Therefore, this study is the pioneer in proposing a theoretical model that may be progressively implemented in academic and non-academic organizations in Ecuador. Accordingly, the findings may help generate policies and programs for higher education institutions where the application of psychological empowerment may strengthen teachers' autonomy to cope with the high-stress levels experienced in this setting.

Implications

This study succeeded in answering the research questions regarding which dimensions of psychological empowerment are closely related to job stress. However, despite this achievement, further studies are required to understand the dynamics set by the model proposed on these variables, particularly psychological empowerment, which was used here as an independent variable, differing from other studies where psychological empowerment has been assessed as a moderating variable.

Concerning the outcomes of this research, the findings are only conclusive for one dimension of psychological empowerment, specifically self-determination. Therefore, it is not possible to generalize the results to other universities and organizations, mainly due to some limitations acknowledged by the author. These limitations are detailed as follows: a) the target group considered only tenured professors and not occasional academics; b) the sample size was limited to 200 observations obtained from HEIs located in a specific geographical area in Ecuador (Zone 3); c) The participating universities included only public institutions, and private universities were not considered; and d) this was a cross-sectional study; hence, data were collected in a specific period of 2019.

Despite the observed limitations, this study provides valuable evidence to the limited but growing literature concerning the relationship between psychological empowerment and job stress among university professors from a developing country, such as Ecuador. In addition, this new information can be used to compare with future research evaluating similar variables, allowing us to understand the underlying factors generating high job stress levels during pre-and post-COVID-19 scenarios. Thus, these results can be also used as the foundation for developing and implementing effective organizational intervention programs and policies, significantly improving employees' well-being and mental health, particularly in educational environments. Furthermore, psychological empowerment can be implemented

inside these environments as a valuable tool to increase individual performance, ultimately obtaining improved organizational results.

Finally, the main findings suggest that job stress levels can be reduced when teachers perceive more autonomy, particularly in deciding the work methods used to carry out specific tasks. Therefore, reaching high levels of autonomy may increase the psychological empowerment level, considerably reducing work-related stress levels, as discussed by Spreitzer (1995).

Recommendations

Future research should address the limitations experienced in this research; therefore, psychological empowerment and job stress should be evaluated in larger populations of teachers, including academics from private higher education institutions. This new analysis may provide more insights into the relationship between these variables, improving the predictive power of the current structural model. Additionally, future research should focus on longitudinal studies to overcome the limitations of a cross-sectional approach.

Finally, the use of the results of this study is suggested to develop appropriate and timely strategies to cope with the effect of job stress on university teachers. However, the inherent particularities of the higher education sector in Ecuador should be considered when planning these initiatives.

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Appendix A – Letter of acceptance for publication

Fwd: Dove Medical Press: Submission accepted for publication

1 mensaje

De: **Ms Sandi McIver** <sandi@dovepress.com>
Date: dom, 6 nov 2022 a las 17:49
Subject: Dove Medical Press: Submission accepted for publication
To: Dr Jácome <a20152110@pucp.pe>

Dear Dr Jácome ,

I am pleased to inform you that the submission, "Psychological Empowerment and Job Stress in Higher Education Institutions in Ecuador", has been accepted for publication in "Psychology Research and Behavior Management". The article publishing charge is now payable before the paper can be progressed any further and an invoice is accessible here: https://www.dovepress.com/invoice.php?i_key=xLHiK9Zmfc9jD6JlXNv1kvpj62578 (If you require any amendments to your invoice please reply to this email. Please note invoices cannot be amended once a payment has been made)

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**Appendix B – Sample of Occupational Stress Inventory-Revised test (OSI-R).
Spanish version authorized by Psychological Assessment Resources (PAR), Inc.**

OSI-R™

Folleto de Ítems

Este folleto está dividido en tres secciones las cuales contienen enunciados acerca de los puestos de trabajo y los hábitos personales. Se puede pedir que complete una, dos o las tres secciones. Asegúrese de responder a todos los enunciados por cada sección que se le pida completar.

Empiece por completar la información en la portada de la Hoja de Valoración de su OSI-R. Ingrese su nombre, edad, género, cargo, y la fecha de hoy. Ahora vaya a la página 3 para las indicaciones de completado de sus valoraciones.

PAR Psychological Assessment Resources, Inc., P.O. Box 998/Odessa, FL 33556/Toll-Free 1-800-331-TEST/<http://www.parinc.com>

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9 8 7 6 5 4 3 2 1

Reorder #RO-4072

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Instrucciones

Lea cada uno de los enunciados cuidadosamente. Para cada enunciado, rellene en el círculo con el número que mejor se ajuste a usted.

Rellene el ① si el enunciado es *raramente* o *nunca* verdad.

Rellene el ② si el enunciado es *en ocasiones* verdad.

Rellene el ③ si el enunciado es *a menudo* verdad.

Rellene el ④ si el enunciado es *usualmente* verdad.

Rellene el ⑤ si el enunciado es verdad *la mayor parte del tiempo*.

Por ejemplo, si usted cree que el enunciado es en ocasiones verdad, usted deberá rellenar en el círculo 3 para ese enunciado en su hoja de valoración.

Ejemplo

1
1
2
3
4
5

Rellene solo un círculo para cada enunciado. Asegúrese de valorar **TODOS** los enunciados para cada sección que se le pidió completar. **¡NO BORRE!**

Si necesita cambiar una respuesta, marque con una "X" a través de la respuesta incorrecta y luego rellene el círculo correcto, así.

Ejemplo

1
1
X
3
4
5

Si el enunciado no es aplicable, por favor marque ① *raramente* o *nunca* verdad.

SECCIÓN UNO (ORQ)

Haga sus valoraciones en la Primera Parte de la Hoja de Valoración

1. En el trabajo esperan que haga varias actividades diferentes en muy poco tiempo.
2. Siento que las responsabilidades en mi trabajo se están incrementando.
3. Se espera que realice actividades en mi trabajo para el cual jamás he sido capacitado.

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Appendix C - Sample of Psychological Empowerment test

(Spanish version)

A continuación se presentan unos enunciados relacionados con su experiencia psicológica en el puesto de trabajo. Redondee la opción que considere más oportuna en su caso, en una escala del 1 al 7, correspondiendo el 1= Totalmente en desacuerdo y 7= Totalmente de acuerdo.

Enunciado	Puntuación						
<i>Significado</i>							
1. El trabajo que yo hago es muy importante para mi	1	2	3	4	5	6	7
2. Mis actividades laborales son personalmente valiosas	1	2	3	4	5	6	7
3. El trabajo que realizo es significativo para mi	1	2	3	4	5	6	7
<i>Competencia</i>							
4. Confió en mi aptitud para hacer mi trabajo	1	2	3	4	5	6	7
5. Confió en mi capacidad para desarrollar las tareas que se requieren en mi trabajo	1	2	3	4	5	6	7
6. He adquirido dominio en las habilidades necesarias para desarrollar mi trabajo	1	2	3	4	5	6	7
<i>Autodeterminación</i>							
7. Tengo autonomía para determinar cómo hacer mi trabajo	1	2	3	4	5	6	7
8. Yo puedo decidir por mí mismo como organizar mi trabajo	1	2	3	4	5	6	7
9. Tengo suficiente libertad e independencia para decidir cómo hacer mi trabajo	1	2	3	4	5	6	7
<i>Impacto</i>							
10. Mi trabajo es importante para el funcionamiento de mi unidad	1	2	3	4	5	6	7
11. Tengo suficiente control sobre lo que ocurre en mi unidad	1	2	3	4	5	6	7
12. Tengo suficiente influencia en lo que ocurre en mi unidad	1	2	3	4	5	6	7