

Degree of relationship between performance and labor productivity in the performance indicators of a service area of a Higher Education Institution in the face of the COVID-19 pandemic

Grado de relación entre desempeño y productividad laboral en los indicadores de desempeño de un área de servicios de una Institución de Educación Superior ante la pandemia COVID-19

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Abstract

Objective. Determine the degree of relationship between Performance and labor productivity to identify if there are differences in the performance indicators of a service area of a Higher Education Institution between the face-to-face and home office modality in the face of the Covid-19 pandemic. Methodology. It is a quantitative, correlational research, with a descriptive and cross-sectional scope, it was used from the perspective of a population census. The information was obtained through a questionnaire, an instrument was applied with 41 questions divided for two variables that are Labor performance and Labor productivity. The instrument that was applied was validated by the SPSS program to obtain statistical reliability data and to know its Cronbach's Alpha, the value obtained was .931, considered as a high degree of reliability. Contribution. It was determined that the degree of relationship between Performance and Labor Productivity is positive, the health contingency was not a reason to give up in this Department.

Performance, Labor Productivity, Institution of Higher education

Resumen

Objetivo. Determinar el grado de relación entre Desempeño y Productividad laboral para identificar si existen diferencias en los indicadores de desempeño de un área de servicios de una Institución de Educación Superior entre la modalidad presencial y home office ante la pandemia Covid-19. Metodología. Es una investigación cuantitativa, correlacional, con alcance descriptivo y transversal, fue empleada bajo la perspectiva de un censo poblacional. La información se obtuvo por medio de un cuestionario, se aplicó un instrumento con 41 preguntas divididas para dos variables que son Desempeño laboral y Productividad laboral. El instrumento que se aplicó fue validado por el programa de SPSS para obtener datos estadísticos de fiabilidad y conocer su Alfa de Cronbach, el valor obtenido fue .931, considerado como alto grado de fiabilidad. Contribución. Se determinó que el grado de relación entre Desempeño y Productividad laboral es positivo, la contingencia sanitaria no fue motivo para desistir en este Departamento.

Desempeño, Productividad Laboral, Institución de Educación Superior

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Introduction

Productivity is related to production, which began with the industrial revolution, but since the Second World War it has undergone a remarkable development. It was in 1955 when Japan established the Japan Productivity Center (JPC) in response to the need to challenge international competitiveness, which led to achieving one of the highest levels of productivity in the world in the manufacturing sector (Japan Productivity Center, n.d.). Countries such as China, the Soviet Union, Eastern European countries, Africa, Thailand, Singapore, South Korea, Brazil and Vietnam have imitated Japan's model for increasing productivity (CEFOF, 1995 as cited in Morales & Masis, 2014).

The productivity of companies is the main purpose of managers and they have the responsibility to keep it operating successfully, considering that their collaborators are the ones who contribute a large part of their efforts to meet the assigned goals. Singh (2008) states that "Resources are managed by individuals, who put their efforts in generating goods and services in an efficient way, progressing such production more and more, so any intervention to improve organizational productivity is by its staff" (p.293).

This is how companies seek to increase productivity, wishing to remain active in the market for goods and services, and over the years have made this a strategic objective. Medina (2010) mentions that "without it, products or services do not reach the levels of competitiveness required in the globalized world" (p.112). In the first decade of the 20th century, performance began to be measured as a set of processes.

The initial methodologies were called job analysis and called for individual employees to be measured on the basis of their performance throughout their workday. Performance in public organizations is analyzed in terms of the results or impact of the fulfillment of the mission and also how these were achieved in terms of efficiency, effectiveness, quality and economy, with the purpose of continuing with the same evaluation method to detect whether the performance indicators are being successfully executed (ECLAC, *et al.*, 2005).

The performance indicator systems calculate the impact caused by the performance of the main functions of the organizations, linking profitability with productivity and complementing the indicators, helping to achieve a comprehensive assessment of productivity, creating a record that will help the organization to compare and thus detect the areas in which, when compared, they can increase performance and improve the use of available resources (Morales *et al.*, 2014).

The managers of any organization or educational institution have a great responsibility and commitment to apply systems that are adapted to their organization, whether of different means of action, organizational difficulty and dimension, with the purpose of improving the budgetary process of their company. Higher Education Institutions (HEI), considered as a social system, are influenced by globalization processes, by the strong impacts that Mexican society has experienced in the economic, political and social areas, which leads them to make significant modifications in their total structure, with the purpose of adapting and remaining as a social organism. This can be crucial for the (IES), sometimes these changes are detrimental to labor productivity and performance indicators, being affected with a low compliance and prevents them from reaching the proposed objective.

Currently, the institutions continue to face different challenges and have had to adapt due to the Covid-19 pandemic, which has caused uncertainty in the face of the difficulty. On April 6, 2020, UNESCO, through the International Institute for Higher Education in Latin America and the Caribbean (IESALC), showed the document: "Covid-19 and higher education: from immediate results to the day after. Analysis of impacts, response and recommendations".

This document presents the influence of the pandemic on the higher education team: students, faculty, non-teaching staff, public policies; as well as the institutional responses to the pandemic context. This document presents in a generalized manner the impact of Covid-19 on Higher Education Institutions (HEI), limiting it to recommending the cancellation of classes and the temporary closure of schools (UNESCO IESALC, 2020).

This principle of safeguarding public health made real the shift in school-based higher education from face-to-face to virtual. And with that, this document admits to analyze the impacts of the temporary suspension of face-to-face work in the (IES), the interruption of the usual, the traits of anguish before the crisis apart from generating uncertainty since the demands of the students allude to the detriment of the quality of the classes received online, which is not the same as that of the face-to-face classes (UNESCO IESALC, 2020).

It has definitely been a great challenge for Higher Education Institutions (HEI) to know how to handle all the situations that arise during the Covid-19 pandemic, performance has been affected for students, teachers, administrative staff, maintenance, etc. There are different factors that intervene in the low productivity and with it the non-compliance of the performance indicators, in the case of the collaborator of the (IES) is concerned about meeting their objectives or goals, the virtual modality has been a difficulty for some, because it suffers from technological deficiency.

The world is witnessing that the Covid-19 pandemic caused companies to face different factors that prevented them from meeting their objectives, which in order to achieve them, performance indicators were first established. Not being able to meet business objectives had a direct impact on finances, profits, low demand for products and services, reduction of customer base, etc.

So real is the pandemic situation that the ILO has estimated for Latin America and the Caribbean as a whole, a loss of 10.3% of employment hours for the second quarter of the year, which is equivalent to 25 million corresponding full-time jobs (40 hours per week) (ILO, 2020). The Inter-American Development Bank (2020) considers that, "in different scenarios regarding the period and depth of the crisis, between 4.4% and 14.8% of formal jobs in the region would be lost" (Altamirano, Azuara & González, 2020). Finally, ECLAC projects that, "on average for the year, the unemployment rate will stand at 11.5%, some 3.4 percentage points above the level of 2019, which shows a growth of some 11.6 million in the number of unemployed individuals" (ECLAC, 2020, p.15).

Different companies and institutions were faced with the decision to make home office, managers and employees were not prepared for what this would cause them, it was a modality to which they had to adapt and that had a negative and positive impact, since many companies require the presence of their staff to continue working and caused them organizational decontrol. As well as for the students, as they had to adapt to receiving their classes online.

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020), about 70% of the world's student population is being affected, while in Mexico (preschool, primary, secondary, middle and high school) a total of 37, 589, 960 students have been affected.

The Covid-19 pandemic has shown different needs, and one of the most important is in the education sector, which has demonstrated the lack of conditions that many people go through in order to get through the school cycle, which has caused school desertion.

The company that needs to be investigated is a Higher Education Institution, in a Department that performs school services. In this Institution there is a management of performance indicators where the high performance of its workers has been shown, but due to the sanitary contingency Covid-19, it is desired to investigate if these have been affected in the performance and labor productivity when performing their tasks from home.

Mentioning the above, it is intended to review the degree of relationship between performance indicators in labor productivity during the Covid-19 pandemic, which leads me to present the following question: What is the degree of relationship between Performance and Labor Productivity in the fulfillment of performance indicators during the Covid-19 pandemic?

The objective is to determine the degree of relationship between Performance and Labor Productivity to identify if there are differences in the performance indicators of a service area of a Higher Education Institution between the face-to-face and home office modality in the face of the Covid-19 pandemic.

Material and Method

It is a quantitative, correlational research, with descriptive and transversal scope. The subjects of the study are collaborators of the service area of a Higher Education Institution, the study was used under the perspective of a population census. The population consisted of a total of 38 collaborators in the administrative area, 12 men and 26 women, of whom 22 are married, 11 are single and 5 are single with children, with a temporary contract for 29 workers and 9 are permanent employees.

Also, different levels of education were observed among the work team, where 18 employees have a Master's degree, 14 have a Bachelor's degree and 6 have a Bachelor's degree.

It is important to mention that the collaborators of the Department under study have high productivity in their performance indicators in the last four years. In 2017 they obtained 97.88% compliance, in 2018 99.70% compliance, in 2019 99.70% compliance and finally in 2020 they obtained 99.65% compliance, this shows the labor commitment of the entire organization.

The information was obtained by means of a questionnaire, an instrument was applied divided for two variables (forming a single one), the first part measured the variable of Job Performance and the second measured the variable of Job Productivity as well as its dimensions, it consisted of a total of 41 questions, corresponding 21 questions to the variable of Job Performance and 20 questions to the variable of Job Productivity.

The instrument is a hybrid of the authors Lorenzo (2018); Clark (2018); Rojas and Vilches (2018) and Guzmán (2017) adapted to the needs of this research.

The first variable: Job performance, has three dimensions based on Robbins (2004), Quality of work, Teamwork and Job satisfaction.

The second variable: Labor Productivity, has been operationalized in two dimensions, Effectiveness and Efficiency, from the authors Robbins and Judge (2013).

Procedure

The procedure was carried out in 11 phases

Phase 1. A search of concepts from different authors on the research approach was carried out, identifying whether it is quantitative or qualitative, and it was determined according to the characteristics of the study.

Phase 2. An exploration of definitions of the scope of the study was made, and it was found that the most used author in this type of research is Hernandez *et al.* (2014) with his book Research Methodology, which facilitated to determine it.

Phase 3. In order to gather information on the subjects, a population census was carried out in which the Head of Department of the Institution under study was asked for the data necessary to construct the characteristics that make up the population.

Phase 4. The design of the instrument that was applied was considering various authors, with the intention of detecting the variables and dimensions discussed in this research, making an adaptation of the items. The instrument used for Work Performance was adapted from Clark (2018), Rojas and Vilchez (2018) and the Work Productivity instrument was adapted from Lorenzo (2018) and Guzmán (2017).

Phase 5. A pilot test was conducted with 10 collaborators; the instrument applied was validated by the SPSS program to obtain statistical data on reliability and to determine its Cronbach's Alpha. The first variable Job performance has three dimensions: Quality of work obtained an alpha of .860, Teamwork obtained an alpha of .736 and Job satisfaction obtained an alpha of .898. The second variable Labor Productivity has two dimensions, Effectiveness obtained an Alpha of .815 and Efficiency obtained an Alpha of .770. This indicates that the value obtained was .931, considered a high degree of reliability in the SPSS program (see Table 1).

Likewise, the questionnaire is Likert scaled (with a measurement scale from 1 to 5).

Phase 6. The instrument was sent as a pilot test, answered by 10 collaborators of the service area of the Higher Education Institution by e-mail, considering the current situation of the Covid-19 pandemic.

Phase 7. The instrument was applied to the rest of the population through Google Drive, obtaining a database that was analyzed in the SPSS system to interpret the results.

Variables	Dimensions	Items	Questions	Cronbach's alpha
Job performance	Quality of work	7	1-7	.860
	Teamwork	7	8-14	.736
	Job satisfaction	7	15-21	.898
Labor productivity.	Efficiency	10	23-31	.815
	Efficiency	10	32-41	.770

Table 1 Cronbach's alpha score for the research study variables

Source: Own Elaboration

Phase 8. The excel file was downloaded from google drive with the answers of all the Department's collaborators, which was entered into the SPSS system and correlated with the following data.

Phase 9. The interpretation of results was based on the authors Hernández, Fernández and Baptista (2014), determining the correlation coefficient yielded as: very weak positive correlation, weak positive correlation, medium positive correlation, considerable positive correlation, very strong positive correlation and perfect positive correlation.

Phase 10. In the discussions, the data obtained from the results are considered, mentioning the level of performance and productivity of the collaborators.

Based on all the research, conclusions and recommendations were drawn for the company under study or in case someone else takes it over.

Results

The results are interpreted by means of a correlation, which shows the relationship between performance and labor productivity, which can be seen in Table 2, then a description of the correlation between dimensions is made.

With a confidence level of 95%, Quality of work and Teamwork, it is stated that there is a correlation of .374*, it is considered a weak positive correlation, increasing one percentage unit will result in an increase of 13.98%. According to the authors Hernandez, Fernandez and Baptista (2014) state that when the correlation coefficient is squared, the percentage unit that would be increased in relation to these dimensions is obtained.

		Quality of work	Teamwork	Job satisfaction	Efficiency	Eficiencia
Quality of work	Pearson correlation	1	.374*	.406*	.639**	.625**
	Sig. (bilateral)		.021	.011	.000	.000
	N	38	38	38	38	38
Teamwork	Pearson correlation	.374*	1	.346*	.387*	.573**
	Sig. (bilateral)	.021		.033	.016	.000
	N	38	38	38	38	38
Job satisfaction	Pearson correlation	.406*	.346*	1	.713**	.636**
	Sig. (bilateral)	.011	.033		.000	.000
	N	38	38	38	38	38
Efficiency	Pearson correlation	.639**	.387*	.713**	1	.864**
	Sig. (bilateral)	.000	.016	.000		.000
	N	38	38	38	38	38
Eficiencia	Pearson correlation	.625**	.573**	.636**	.864**	1
	Sig. (bilateral)	.000	.000	.000	.000	
	N	38	38	38	38	38

* The correlation is significant at the 0.05 level (bilateral).
 ** The correlation is significant at the 0.01 level (bilateral).

Table 2 Correlativity Performance and Labor Productivity
 Source: Own Elaboration

With a confidence level of 95%, Job Quality and Job Satisfaction is stated to have a correlation of .406*, it is considered a weak positive correlation, increasing by one percentage unit will result in 16.48%.

At a 99% confidence level, Quality of Work and Efficacy is stated to have a correlation of .639**, this is considered a medium positive correlation, an increase in one percentage unit will result in an increase of 40.83%.

With a confidence level of 99%, Quality of Work and Efficiency can be stated to have a correlation of .625**, this is considered a medium positive correlation, indicating that an increase in one percentage unit will result in 39.06%.

Teamwork and Job Satisfaction is affirmed with 95% confidence, having a correlation of .346*, it is considered as a weak positive correlation, increasing one percentage unit will result in an increase of 11.97%.

Teamwork and Effectiveness is affirmed with 95% confidence with a correlation of .387* considered a weak positive correlation, increasing by one percentage unit will result in a 14.97% increase%.

Teamwork and Efficiency is affirmed with 99% confidence, with a correlation of .573** considered as a positive average correlation, increasing one percentage unit will result in a 32.83% increase%.

Job Satisfaction and Efficacy is affirmed with 99% confidence, with a significant correlation of .713**, it is a considerable positive correlation, increasing by one percentage unit, will result in an increase of 50.83%.

With 99% confidence Job Satisfaction and Efficiency a correlation of .636** can be affirmed, it is considered a medium positive correlation, increasing one percentage unit will result in an increase of 40.44%.

With 99% confidence Efficacy and Efficiency is affirmed with a significant correlation of .864**, a significant positive correlation, increasing by one percentage unit will result in an increase of 74.64%.

As could be observed, the relationship between Job Performance and Labor Productivity is positive. Where the dimensions of the variable Job Performance show a low relationship with each other, Job Quality and Teamwork obtained a .374* correlation, Job Quality and Job Satisfaction obtained a .406* correlation and Teamwork and Job Satisfaction obtained a .346* correlation with a confidence level of 95%. 346* correlation with a confidence level of 95%, but obtained a good relationship with the Labor Productivity variable, however, the dimensions of the Labor Productivity variable show a very good relationship with each other since Effectiveness and Efficiency obtained .864** correlation with 99% confidence, which indicates that there is high Productivity and low Performance in the collaborators of the service area of the Higher Education Institution.

Regardless of the low dimensions Quality of Work, Teamwork and Job Satisfaction of the variable Job Performance, it was noted that there is very good labor productivity because the dimensions that make up Effectiveness and Efficiency are within .864** correlation, this indicates that workers in the service area have very good Effectiveness and Efficiency, and this is confirmed in Table 3 Percentage of performance indicators which shows the results of the percentage of compliance with performance indicators established by the area of the last four years in this Department.

Percentage of performance indicators				
Area	2017	2018	2019	2020
Information Services Management	98.76%	99.64%	99.55%	99.72%
Administration of S. E.	99.38%	99.90%	100%	100%
Coordination of R. & C. Systems E.	100%	100%	99.53%	100%
E. R. Services Administration	93.87%	99.80%	100%	100%
Headquarters	97.40%	99.16%	99.42%	98.57%
Total	97.88%	99.70%	99.70%	99.65%

Table 3 Percentage of performance indicators

Source: Own Elaboration based on the information provided by the Head of the corresponding area

It can be observed that the performance indicators not only remained the same, but increased despite the fact that they were working in the home office due to the Covid-19 pandemic. This indicates that the staff is committed to their work, regardless of where they are performing their work activities they comply with the deliverables of the Department, this can be reinforced by observing the results of the highest correlations, which are between Efficiency and Effectiveness with .864** correlation.

Discussions

The results obtained in this research indicate that there is a positive relationship between the variables Labor Performance and Labor Productivity belonging to the collaborators of the service area of the Institution of Higher Education. The analysis shows that in the variable Job Performance the 38 employees surveyed expressed that in Quality of work and Teamwork they obtained .374* correlation, Quality of work and Job Satisfaction .406* correlation and Teamwork and Job Satisfaction .346* correlation showing a weak positive correlation.

However, in the Labor Productivity variable, the 38 employees surveyed indicated that they have a very good level of Effectiveness and Efficiency, obtaining a correlation of .864**, indicating that it is a considerable positive correlation.

Aguinis (2007) mentions that performance is what employees do and their behaviors and not what the employee produces or the results of their work, although sporadically as behaviors or activities are not clearly observable, it is necessary to infer them from their results. Which indicates that in the Department of the service area has a low level of Job Performance in Quality of work, Teamwork and Job Satisfaction, but they are highly productive with very good Effectiveness and Efficiency, achieving the goals set. Robbins and Judge (2013) mention that an organization is productive if it achieves its goals by converting inputs into outputs at the lowest cost.

Chiang and Ojeda (2013) mention that between the fifties and sixties there was a series of studies to establish the relationship between satisfaction and productivity. The results obtained show a very consistent relationship between the two, establishing that "a happy worker is a productive worker"; although, in the nineties more studies were made that disagreed a little with the previous conclusions, since although they affirm the existence of a positive relationship, it is established that the correlation is not so high.

In the research of Chiang and Ojeda (2013) found that V. H. Vroom (1964) analyzes the data of 23 researchers on the possible correlation between satisfaction and performance. From the examined results only in three researches a positive and significant correlation between job satisfaction and performance is created. The rest of the studies show that there is little or no relationship between the two variables. The median value of the correlation was 0.14, which suggests that 2% of the variation in performance can be related to job satisfaction scores.

The results support the idea that there is no empirical evidence of a relationship between job satisfaction and job performance. Only a slight positive, but low, correlation between these constructs could be recognized.

This is similar to the results of this research, there was a positive relationship between Performance and Labor Productivity, where a low correlation is noted between the Performance dimensions and a very good correlation between the Productivity dimensions.

With this analysis of results, the Department under study will be favored by detecting the weaknesses that exist and internal adjustments can be made, eliminating possible problems that allow the achievement of organizational goals and thus the collaborators execute their activities improving day by day and positively impacting their performance and labor productivity.

Conclusions

In the study carried out, it is possible to affirm the existence of a positive relationship between Performance and Labor Productivity, but it is established that the correlation is not so high. Although there is no high correlation between some dimensions, it was determined that the performance indicators in labor productivity of workers in the service area of the Institution of Higher Education remain high in the face of the Covid-19 pandemic, the health contingency was not a reason to give up on this Department, since the percentages of compliance with indicators show that they are highly productive and continue to meet organizational goals.

Thus, the objective of this research is achieved, where the degree of relationship between Performance and Labor Productivity is positive, and there is no difference in the fulfillment of performance indicators between the face-to-face and home office modality in the face of the Covid-19 pandemic, since the performance indicators remained high but also increased.

The strongest and most positive relationship was identified in the Labor Productivity variable, between the Effectiveness and Efficiency dimensions with a correlation of .864**. This indicates that the employees in the service area are highly productive and responsible when performing their activities.

The lowest relationship is in the variable Job Performance, between the dimensions Job Quality and Teamwork obtained .374* correlation, Job Quality and Job Satisfaction .406* correlation and Teamwork and Job Satisfaction .346* correlation, being a weak positive correlation, this shows the importance of paying attention and focusing on the needs of workers to obtain more satisfied and productive employees, this will increase the effectiveness of the Department and the welfare of its employees.

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