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Productivity and its relation to business management in Peruvian companies

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Abstract: This study sought to determine the relationship between productivity and Business Management in Peruvian companies. The methodology included a quantitative approach, applied type, non-experimental design, correlational and cross-sectional scope; in addition to having a sample of 50 employees to whom two questionnaires were applied seeking to evaluate their Business Management practices and the relationship it has within productivity. Among the results, Spearman's Rho correlation coefficient was applied to determine the existence or not of a relationship between the variables "productivity" and "Business Management" as well as the dimensions of the variable "Business Management", it was obtained (1) the existence of a considerable positive correlation (r=0.723) and a significance level of less than 5% between both variables, (2) a considerable positive correlation (r=0.670) and a significance level of less than 5% between effectiveness and Business Management, (3) a considerable positive correlation (r=0.636) and a significance level of less than 5% between efficiency and Business Management and (4) a very strong positive correlation (r=0.853) and a significance level of less than 5% between innovation and Business Management. The conclusion is that those companies that prioritize effectiveness, efficiency and promote innovation within their business management are more productive and competitive in the market; furthermore, this study offers a solid platform for future research and for the development of strategies that promote productivity and business success in the Peruvian context.

Keywords: *Business management, Lean production, Organizational culture, Organizational performance, Productivity.*

1. Introduction

The interaction between productivity and business management is a crucial aspect of business effectiveness and competitiveness. Productivity, as a measure of efficiency in the use of resources to achieve results, is fundamental to business performance and profitability. On the other hand, business management encompasses the strategies and practices aimed at making good decisions as well as directing the organization toward its goals. Furthermore, understanding and optimizing this relationship is essential to drive operational efficiency, and innovation, and maintain a competitive advantage in an ever-evolving market [1].

In the international context, in Jordan, a positive relationship was found between employee productivity and business management effectiveness, highlighting the importance of effective

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management strategies in optimizing productivity in the Peruvian business context [2]. Additionally, it was noted that occupational safety and health, along with port performance and labor safety, significantly influence cargo loading and unloading productivity, providing an important precedent for research, and demonstrating the relevance of factors such as labor safety and occupational health in port service productivity [3].

Within the national scope in Lima, a literature review was conducted on the productivity of incident management with conversational chatbots, highlighting that the integration of conversational agents in incident management has a substantial impact, achieving greater operational efficiency by shortening response times and, simultaneously, increasing customer satisfaction, which translates to a more positive experience and greater brand loyalty [4]. Additionally, a business management model based on administrative thought theories in Mypes was proposed, revealing that business management practices have a positive and significant influence on different aspects of entrepreneurship [5]. Furthermore, it was found that innovations in products, services, and marketing were associated with an increase in market share, while innovations in processes and organization were related to productivity. Moreover, it was discovered that companies with R&D activities had a greater positive association between innovation strategies and productivity compared to companies without R&D [6].

In Chiclayo, a study was conducted at the José Leonardo Ortiz District Municipality, revealing that the implementation of a process management model significantly contributes to optimizing public services and the efficient use of resources [7]. Additionally, it was demonstrated that there is a need to improve the debt management process through the application of the BPM (Business Process Management) methodology, to reduce time and costs, monitor performance through key indicators, and improve decision-making [8].

Figure 1.
Peruvian construction company.

From a theoretical justification, this study focuses on the existing gap regarding the analysis of both variables, considering various currents of administration, such as models and/or strategies that improve productivity management in these entities. As a practical part, some recommendations will be obtained that will provide valuable information for the companies under study regarding their dimensions.

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Methodologically, this research is considered quantitative, non-experimental, correlational, and cross-sectional. Additionally, instruments will be used to collect data such as interviews and surveys.

Finally, the study seeks to determine the relationship between productivity and Business Management in Peruvian companies during the period 2023-2024.

1.1. Conceptual Theories

1.1.1. Business Model Theory

This refers to the conceptual framework that describes how a company creates, delivers, and captures value through its business activities. This approach focuses on the underlying structure and logic that supports the operation of an organization, including how it generates revenue, interacts with its customers, manages its resources, and establishes strategic alliances [9].

1.1.2. Business Management Theory

This refers to the set of principles, concepts, techniques, and practices that guide the administration and management of a company or organization to achieve its objectives efficiently and effectively. It also covers aspects such as planning, organizing, directing, and controlling resources (human, financial, material, etc.) to achieve maximum benefit and business success [10].

1.1.3. Total Quality Management Theory

This seeks to constantly optimize the quality of the entity's products or services, focusing on the idea that employees, from managers to frontline workers, are responsible for ensuring quality at every stage of the process. This involves identifying and correcting errors, involving everyone in continuous improvement, and focusing on meeting the needs and expectations of their customers [11].

1.1.4. McGregor's Theory X and Theory Y

This describes two different approaches to how managers perceive their employees. In the first, it is believed that people are lazy, do not enjoy work, and require close control and supervision. In contrast, the second considers that they are intrinsically motivated, seek responsibilities and challenges, and can be self-disciplined. These theories influence the way organizations are managed and directed [12].

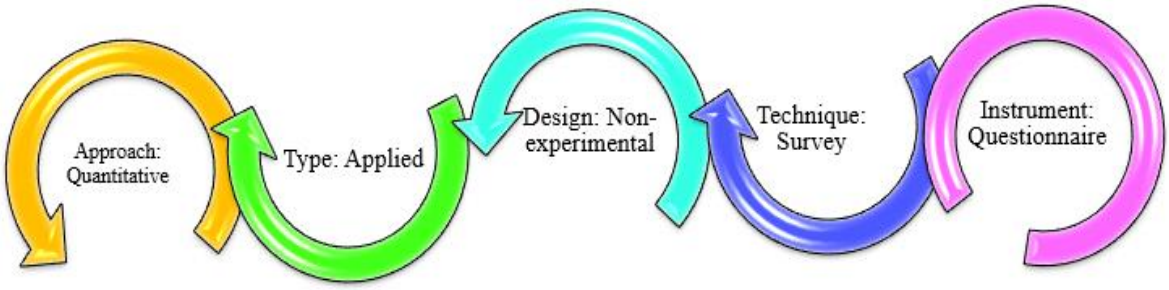

Figure 2.
Methodology.

2. Materials and Methods

Research approach: Quantitative, as the application of techniques and instruments seeks to obtain numerical data, allowing the evaluation of the relationship between these variables. It is also distinguished by the use of statistical tools to quantify phenomena and is based on measurement and quantification to collect, process, and analyze data [13, 14].

Type of research: Applied, as with the help of the theoretical bases, it seeks to arrive at recommendations that serve as a guide for other companies or, if necessary, serve as a precedent for future research [15, 16].

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Research design: Non-experimental, as there is no manipulation between variables; in other words, the variables have not been intentionally changed. Instead of conducting experiments, we observe events in their natural environment and then study them [17, 18].
The image of the design is presented below:

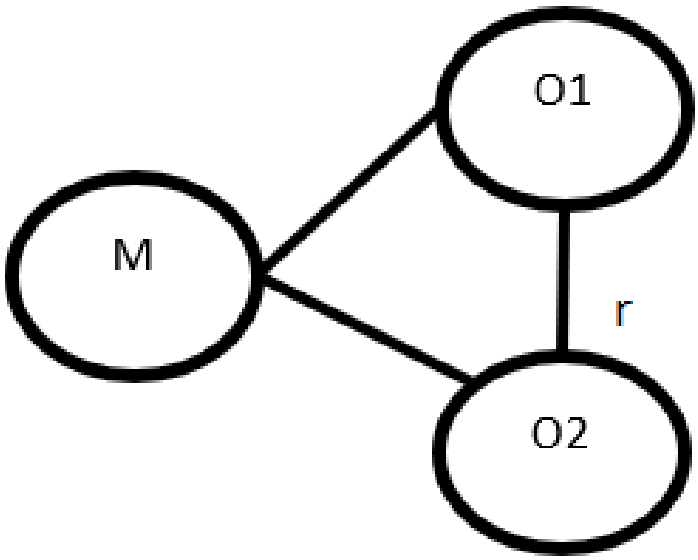

Figure 3.
Research Design.

Where:
M: Employees of Peruvian companies
X: Productivity
Y: Business Management

Scope of the research: Correlational, seeking to determine the strength of the relationship between two or more variables of interest for the same set of participants, or between two observable events or occurrences [19].

Research cross-section: Transversal, as the instrument will only be applied in a specific period [20].

Population: Refers to the sum of the elements defined by the researchers according to the definitions developed in the study. Within the research, a Peruvian company and also its collaborators will be taken into account [21].

- Inclusion criterion: Accounting and administrative area.
- Exclusion criterion: The rest of the areas.

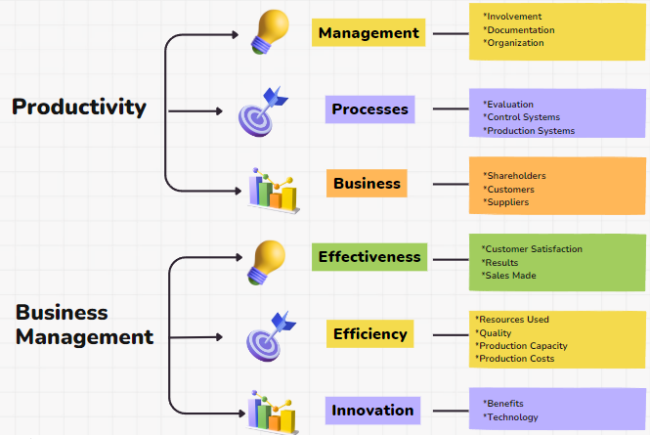

Figure 4.
Table of Operationalization of the Variables.

Sample: Subgroup of cases of a population to whom the data collection will be applied and must be representative [19]. In this research, 50 collaborators of this Peruvian company will be considered.

Sampling: It is a technique to study the sample and as a result of the application of this technique to the population a statistician is obtained. In our study, non-probability convenience sampling will be used [22].

Unit of analysis: The unit of analysis will be each employee in the accounting and administrative area.

Survey: Statistical tool considered as a technique to be applied to the established sample of people [23].

A questionnaire will be elaborated as an instrument to store the data obtained to later be processed by different statistical methods [24].

Table 1.
Measuring instrument datasheet.

Year	2024
Type of Instrument	Questionnaire
Objective	Determine The Relationship Between Productivity and Business Management
Sample	Collaborators
Number of Items	36 Total Divided Into: V1: 17 Items, V2: 19 Items
Application	Direct
Administration Time	20 Minutes
Scale	Likert: (5) Strongly Agree (4) Agree (3) Neither Agree nor Disagree (2) Disagree (1) Strongly Disagree

Note: Information from the data collection instrument. Adapted from "Modelo Business Process Management y la productivity en la empresa Corporación Visión SAC, Lima 2020", by Gómez [25].
(https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/59195/Gomez_DMY-SD.pdf?sequence=1&isAllowed=y)

The level of reliability is related to the accuracy and consistency of the information obtained through an instrument managed at different times [26].

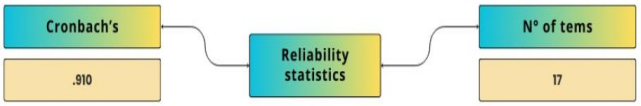

Figure 5.
Reliability of the instrument that measures Productivity.
Note: Adapted from the SPSS v.26 statistical software.

Cronbach's alpha coefficient is found to be 0.910, indicating that the reliability of this instrument is good.

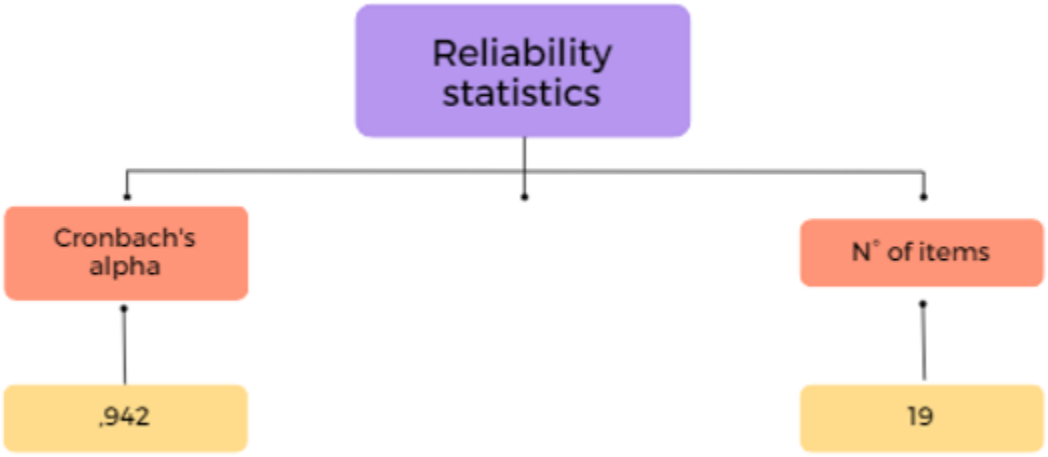

Figure 6.
Reliability of the instrument that measures Business Management.
Note: Adapted from the SPSS v.26 statistical software.

Cronbach's alpha coefficient was found to be 0.942, indicating that the instrument is good.

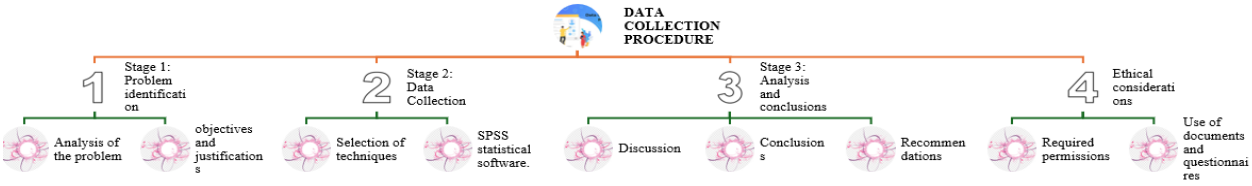

Figure 7.
Data collection procedure.

3. Results and Discussion

3.1. Descriptive Results

3.1.1. Descriptive Analysis of the Productivity Variable

Table 2.
Rating Scale of the Productivity Variable in Relation to its Dimensions.

	Scores		Level		
	Minimum	**Maximum**	**Low**	**Medium**	**High**
Productivity	45	68	45–59	60–64	65–68
Management	9	21	9–16	17–19	20–21
Processes	14	25	14–20	21–22	23–25
Business	14	25	14–20	21–22	23–25

Note: Adapted from the SPSS v.26 statistical software.

Table 2 presented a rating scale for the "Productivity" variable along with its dimensions "management", "processes" and "business". The scores for this variable ranged from a minimum of 45 to a maximum of 68. This variable was classified into three levels: low, medium, and high. Scores between 45 and 59 indicated a low impact, those between 60 and 64 had a medium impact, and scores between 65 and 68 corresponded to a high impact. Regarding the dimensions, the scores ranged from a minimum of 9 and a maximum of 25.

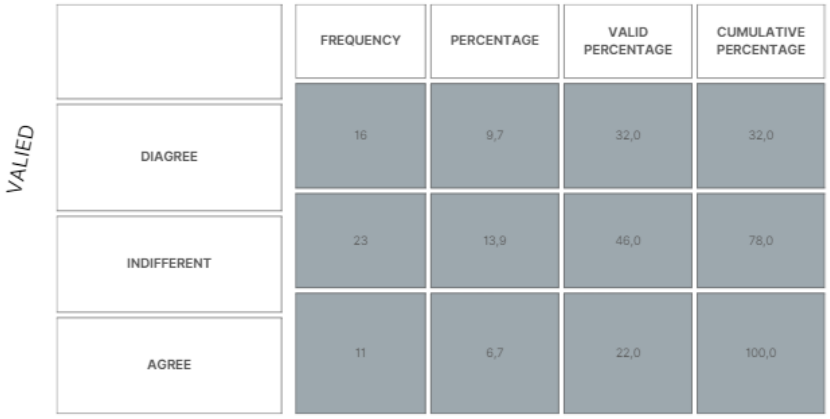

Figure 8.
Distribution of the Productivity Variable.
Note: Adapted from the SPSS v.26 statistical software.

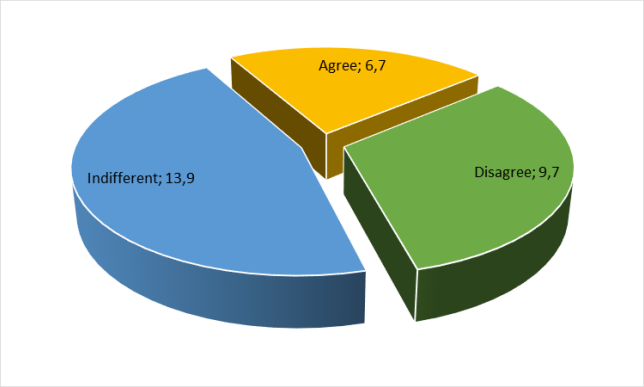

Figure 9.
Distribution of the Productivity Variable.

Figure 8 and Figure 9 showed the distribution of the "Productivity" variable according to the responses given by the respondents. With a total of 50 valid responses, sixteen (9.7%) people disagreed with the statement about the impact of productivity in these companies. Twenty-three (13.9%) remained indifferent (being the majority) and eleven (6.7%) agreed.

Table 3.
Rating Scale of the Productivity Variable In relation to its dimensions.

	Disagree		Indifferent		Agree	
	(N)	(%)	(N)	(%)	(N)	(%)
Management	4	2.4	25	15.2	21	12.7
Processes	13	7.9	18	10.9	19	11.5
Business	14	8.5	15	9.1	21	12.7

Table 3 showed the distribution of the dimensions of the "Productivity" variable divided into three categories: Management, Processes, and Business. For each dimension, the responses of the respondents were presented, distributed in the categories of "disagree", "indifferent", and "agree". In the "Management" dimension, 4 respondents (2.4%) disagreed with the positive impact of this variable, 25 (15.2%) were indifferent, and 21 (12.7%) agreed. In the "Processes" dimension, 13 respondents (7.9%) disagreed with the positive impact of this variable, 18 (10.9%) were indifferent, and 19 (11.5%) agreed. In the "Business" dimension, 14 respondents (8.5%) disagreed with the positive impact of this variable, 15 (9.1%) were indifferent, and 21 (12.7%) agreed.

3.1.2. Descriptive Analysis of the Business Management Variable

Table 4.
Rating Scale of the Business Management Variable in Relation to its Dimensions.

	Scores		Level		
	Minimum	Maximum	Low	Medium	High
Business Management	52	78	52–67	68–71	72–78
Effectiveness	10	20	10–16	17–18	19–20
Efficiency	18	32	18–28	29–30	31–32
Innovation	14	26	14–21	22–23	24–26

Note: Adapted from the SPSS v.26 statistical software.

Table 4 presented a rating scale for the "Business Management" variable along with its dimension's "effectiveness", "efficiency" and "innovation". The scores for this variable ranged from a minimum of 52 to a maximum of 78. This variable was classified into three levels: low, medium, and high. Scores

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between 52 and 67 indicated a low impact, those between 68 and 71 had a medium impact, and scores between 72 and 78 corresponded to a high impact. Regarding the dimensions, the scores ranged from a minimum of 10 and a maximum of 32.

		FREQUENCY	PERCENTAGE	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
VALIED	DIAGREE	17	10,3	34,0	34,0
	INDIFFERENT	20	12,1	40,0	74,0
	AGREE	13	7,9	26,0	100,0

Figure 10.
Rating Scale of the Business Management Variable in Relation to its Dimensions.
Note: Adapted from the SPSS v.26 statistical software.

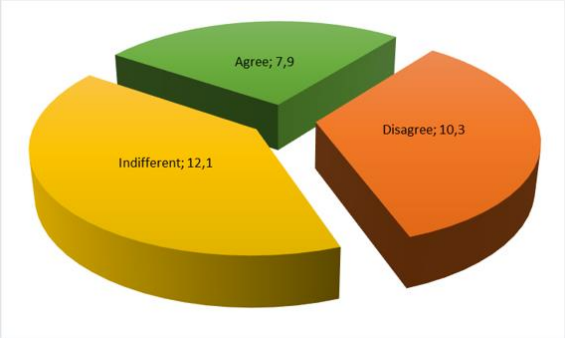

Figure 11.
Distribution of the Business Management Variable.
Note. Adapted from the SPSS v.26 statistical software.

Figure 10 and Figure 11 showed the distribution of the "Business Management" variable according to the responses given by the respondents. With a total of 50 valid responses, seventeen (10.3%) people disagreed with the statement about the impact of Business Management in these companies. Twenty (12000.1%) remained indifferent (being the majority) and thirteen (7.9%) agreed.

Table 5.
Rating Scale of the Productivity Variable in Relation to its Dimensions.

	Disagree		**Indifferent**		**Agree**	
	(N)	**(%)**	**(N)**	**(%)**	**(N)**	**(%)**
Effectiveness	11	22.0	15	30.0	24	48.0
Efficiency	14	28.0	26	52.0	10	20.0
Innovation	15	30.0	23	46.0	12	24.0

Table 5 showed the distribution of the dimensions of the "Business Management" variable divided into three categories: Effectiveness, Efficiency, and Innovation. For each dimension, the responses of the respondents were presented, distributed in the categories of "disagree", "indifferent", and "agree". In the

"Effectiveness" dimension, 11 respondents (22%) disagreed with the positive impact of this variable, 15 (30%) were indifferent, and 24 (48%) agreed. In the "Efficiency" dimension, 14 respondents (28%) disagreed with the positive impact of this variable, 26 (52%) were indifferent, and 10 (20%) agreed. In the "Innovation" dimension, 15 respondents (30%) disagreed with the positive impact of this variable, 23 (46%) were indifferent, and 12 (24%) agreed.

3.2. Inferential Results and Discussion

For this part, a normality test of both variables is proposed, to decide which parametric test should be used at the moment of analyzing the relationship between the variables.

3.3. Normality Test

H_a: The figures follow a normal distribution

H_o: The figures do not follow a normal distribution

Table 6.
Normality test of the variables and their dimensions.

	Shapiro-Wilk		
	Statistic	**GL**	**SIG.**
Management	0.754	50	0.000
Processes	0.882	50	0.000
Business	0.884	50	0.000
Effectiveness	0.762	50	0.000
Efficiency	0.810	50	0.000
Innovation	0.877	50	0.000
Productivity	0.910	50	0.000
Business Management	0.942	50	0.000

All variables and dimensions have a significance level of less than 5%. Therefore, the Ho is rejected in all cases, and it is concluded that all figures follow a normal distribution, which leads to the use of a nonparametric Spearman's Rho test.

3.4. General Hypothesis Test

H_a: Productivity is significantly related to Business Management in Peruvian companies during the period 2023-2024.

H_o: Productivity is not significantly related to Business Management in Peruvian companies during the period 2023-2024.

Figure 12.
General hypothesis testing.
**. Correlation is significant at the 0.01 level (bilateral).

The general objective of this research was to determine the relationship between productivity and Business Management in Peruvian companies during the period 2023-2024. The results showed a

considerable positive correlation with a Spearman's Rho correlation coefficient of 0.723 and a significance level of less than 5%, thus considering the acceptance of the alternative hypothesis where the existence of this relationship is specified.

3.5. Specific Hypothesis Test 1

H_a: Effectiveness is significantly related to Business Management in Peruvian companies during the 2023-2024 period.

H_o: Effectiveness is not significantly related to Business Management in Peruvian companies during the period 2023-2024.

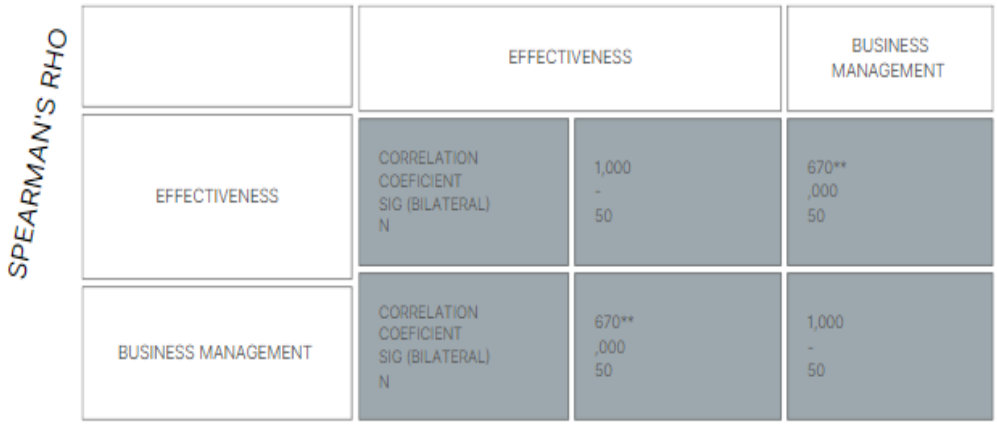

Figure 13.
Specific hypothesis testing 1.
**. Correlation is significant at the 0.01 level (bilateral).

Specific objective 1 was to determine the relationship between effectiveness and Business Management in Peruvian companies during the period 2023-2024. The results showed a considerable positive correlation with a Spearman's Rho correlation coefficient of 0.670 and a significance level of less than 5%, thus considering the acceptance of the alternative hypothesis where the existence of this relationship is specified.

3.6. Specific Hypothesis Test 2

H_a: Efficiency is significantly related to Business Management in Peruvian companies during the 2023-2024 period.

H_o: Efficiency is not significantly related to Business Management in Peruvian companies during the period 2023-2024.

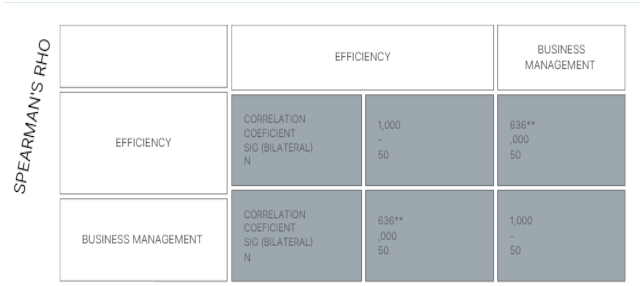

Figure 14.
Specific hypothesis testing 2.
**. Correlation is significant at the 0.01 level (bilateral).

Specific objective 2 is to determine the relationship between efficiency and Business Management in Peruvian companies during the period 2023-2024. The results showed a considerable positive correlation with a Spearman's Rho correlation coefficient of 0.636 and a significance level of less than 5%, thus considering the acceptance of the alternative hypothesis where the existence of this relationship is specified.

3.7. Specific Hypothesis Test 3

H_a: Innovation is significantly related to Business Management in Peruvian companies during the 2023-2024 period.

H_o: Innovation is not significantly related to Business Management in Peruvian companies during the 2023-2024 period.

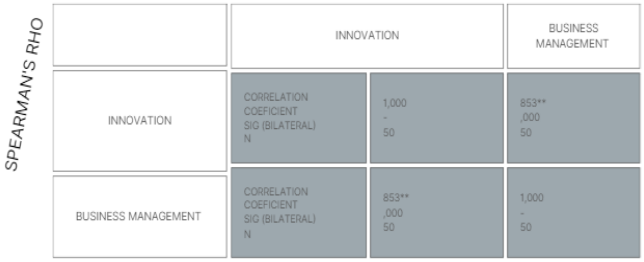

Figure 15.
Specific hypothesis testing 3.
**. Correlation is significant at the 0.01 level (bilateral).

Finalizing with specific objective 3, to determine the relationship between innovation and Business Management in Peruvian companies during the period 2023-2024. The results showed a very strong positive correlation with a Spearman's Rho correlation coefficient of 0.853 and a significance level of less than 5%, thus considering the acceptance of the alternative hypothesis where the existence of this relationship is specified.

4. Discussion

The results of the general objective are complemented by the study of Matta where a Pearson correlation coefficient of r=0.85 with a significance value of less than 0.05 was obtained, demonstrating a high positive relationship between both variables; these findings support the importance of effective management of business processes to improve worker productivity, which suggests the implementation of specific strategies in the field of Business Management to enhance job performance and business success in the Peruvian context [27]. By Gómez [25] a moderate positive correlation was observed

between both variables, with a correlation coefficient of 0.621 and a P-value < 0.05; furthermore, it was revealed that the "high" level of the Business Process Management variable was 76.67%, while the "high" level of the productivity variable reached 55% of the entire sample [25]. We also take into account the study by Rázuri [28] with a correlation coefficient of 0.75, which indicates that as effective Business Management practices are implemented, the productivity of Peruvian companies tends to increase consistently [28]. Bejarano-Auqui found that Business Management practices have a positive and significant influence on the productivity of Peruvian companies, with a beta coefficient of 0.9782 ($p < 0.001$), which shows that effective business management is directly related to higher levels of productivity in the organizations studied [5]. Similarly, these results are complemented by the research of Rivera who observed that productivity experienced a notable decrease, going from an average range of 26.92 to 10.70, representing a reduction of 60. 25%, being attributed to the restrictions imposed during the confinement by COVID-19 in 2020, which negatively impacted the number of scheduled appointments and the performance of preventive maintenance on vehicles; furthermore, when applying the Kruskal-Wallis test, a value of 17.095 was obtained with a significance level of p=.000, which led to the rejection of the null hypothesis and showed that there are significant differences in productivity in the service company during the period analyzed [29].

The results of the specific objective 1 are complemented by the study of Bejarano-Auqui where a positive and significant correlation was demonstrated between Business Management practices and business effectiveness, observing that these practices have a positive and significant influence on the effectiveness of Peruvian companies, with a beta coefficient of 0.3453 ($p < 0.001$) [5]. Likewise, the research of Rázuri [28] also shows a significant positive correlation between effectiveness and Business Management, with a correlation coefficient of 0.68, which indicates that the implementation of effective Business Management strategies is closely related to higher levels of effectiveness in Peruvian companies [28]. For his part Gómez found a moderate positive correlation between both variables, with a correlation coefficient of 0.531 and a P-value < 0.05, in addition, the results revealed that the "high" level of the Business Process Management variable was 73.33%, while the "high" level of the effectiveness variable reached 55% of the sample [27]. Matta also found a Pearson correlation coefficient of r=0.796 with a significance value of less than 0.05 [27].

The results of the specific objective 2 are complemented by the study of Rivera where upon applying the Kruskal-Wallis test, a value of 18.631 was obtained with a significance level of p=.000, which led to the rejection of the null hypothesis and demonstrated the existence of significant differences in the efficiency in the service company during the period analyzed; in addition, it was observed that the efficiency in the company experienced a notable reduction, with a decrease in the average efficiency range from 27. 46 to 11.40, equivalent to a decrease of 58.49%, being attributed to the restrictions generated by the COVID-19 pandemic, such as the partial or total closure of service companies and the reduction in the number of personnel allowed in specific areas, which directly impacted the established man-hours [29]. Matta showed a Pearson correlation coefficient of r=0.825 with a significance value of less than 0.05, evidencing a strong positive correlation between these two variables, showing the importance of efficient management of business processes to enhance the efficiency of workers [27]. Likewise, Gómez identified a moderate positive correlation between both variables, with a correlation coefficient of 0.621 and a P value < 0.05, and within the results it was shown that the "high" level of the Business Process Management variable was 76.67%, while the "high" level of the efficiency variable reached 55% of the sample [25]. In turn, Rázuri [28] revealed a significant positive correlation with a correlation coefficient of 0.72; in other words, the importance of efficient business management oriented to process optimization to enhance performance and competitiveness in the Peruvian business context was highlighted [28]. Also taking into account Arteaga and Saavedra showed that companies that implemented effective Business Management strategies managed to improve their efficiency by an average of 25% compared to those that did not adopt these practices [7].

The results of the specific objective 3 are complemented by the study of Rázuri [28] where the results highlighted a significant positive correlation with a correlation coefficient of 0.80, specifying that

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the implementation of innovative strategies in the framework of a solid Business Management is closely linked to higher levels of innovation in Peruvian companies [28]. Similarly, Bejarano-Auqui explored this relationship, and the results revealed a positive and significant correlation, finding that Business Management practices have a positive and significant influence on innovation in Peruvian companies, with a beta coefficient of 0.2364 ($p < 0.001$) [5]. These results are also complemented by Rivera found that the implementation of technological innovation policies and the optimal use of technological tools were directly related to a 21% increase in labor productivity and a 29% increase in total factor productivity [29]. Bravo showed that companies that integrated innovative practices within their Business Management approach experienced a 35% increase in the efficiency of their collection processes; furthermore, it was observed that the implementation of innovation-oriented Business Management strategies resulted in a 40% improvement in customer satisfaction [8]. Considering also Sookdeo whose statistical data showed that, after the implementation of innovative practices within the framework of effective business management, the rate of innovation in the company increased by 35% in six months [30].

5. Conclusion

The results of the statistical analysis using Spearman's Rho test indicate a considerable positive correlation ($r = 0.723$) between productivity and Business Management in Peruvian companies during the period 2023-2024, accepting the alternate hypothesis, which confirms a significant relationship between both variables and the null hypothesis is rejected. This result mentions that those companies that implement effective business management practices not only optimize their performance but also create an environment conducive to growth and sustainability, highlighting the importance of business management as a key factor in improving productivity in the Peruvian context.

Regarding effectiveness, the results show a significant positive correlation ($r = 0.670$) with Business Management, implying that as Peruvian companies improve their operational effectiveness, they also strengthen their business management. This significant relationship suggests that management practices that promote efficiency, such as staff training and process optimization, are essential for organizational success; moreover, companies that focus on becoming more efficient tend to adapt better to market changes, allowing them not only to survive but also to thrive in a competitive environment.

On the other hand, the considerable positive correlation ($r = 0.636$) between efficiency and Business Management highlights the importance of optimizing resources and internal processes in Peruvian companies, which indicates that those organizations that achieve efficient management of their resources not only reduce costs, but also improve their capacity to respond to market challenges and, in addition, efficiency in business management allows companies to be more competitive, which translates into better overall performance.

Finally, the very strong positive correlation ($r = 0.853$) between innovation and Business Management indicates that companies that foster innovation in their operations and business models tend to have more effective business management, mentioning that the ability to innovate is not only related to creativity and the development of new products but also to the implementation of management strategies that promote an organizational culture open to change and companies that invest in innovation tend to be more agile and adaptive, which allows them to capture new opportunities and face challenges proactively.

6. Recommendation

Companies need to focus on strengthening their business management, so it is recommended to improve planning, organization, management, and control processes to optimize the use of resources and achieve organizational objectives efficiently.

Companies must adopt strategies that will enable them to achieve their goals effectively, which is why the implementation of quality management systems, process optimization, and continuous staff training are recommended.

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It is also essential for companies to focus on maximizing the use of their human, material, and financial resources, so it is recommended that they implement process automation, adopt information technologies, and continuously improve operations.

Finally, companies must foster a culture of innovation, and it is therefore recommended that they invest in research and development, as well as adopt new technologies and business models that will enable them to differentiate themselves in the market and increase their competitiveness.

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Transparency:
The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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References
[1] A. Alshaabani, F. Naz, R. Magda, and I. Rudnák, "Impact of perceived organizational support on OCB in the time of COVID-19 pandemic in hungary: Employee engagement and affective commitment as mediators," *Sustainability*, vol. 13, no. 14, p. 7800, 2021. https://doi.org/10.3390/su13147800

[2] I. Adeinat and N. Kassim, "Extending the service profit chain: The mediating effect of employee productivity," *International Journal of Quality & Reliability Management*, vol. 36, no. 5, pp. 797-814, 2019. https://doi.org/10.1108/ijqrm-03-2018-0064

[3] P. Ricardianto *et al.*, "Impact of loading and unloading productivity on service user satisfaction," *Uncertain Supply Chain Management*, vol. 10, no. 1, pp. 845–854, 2022.

[4] O. Iparraguirre-Villanueva, L. Obregon-Palomino, W. Pujay-Iglesias, F. Sierra-Liñan, and M. Cabanillas-Carbonell, "Productivity of incident management with conversational bots—a review," *IAES International Journal of Artificial Intelligence*, vol. 12, no. 4, pp. 1543–1556, 2023. https://doi.org/10.11591/ijai.v12.i4.pp1543-1556

[5] J. F. Bejarano-Auqui, "Model of business management based on the theories of management thinking of the Mypes," *Academic Journal of Interdisciplinary Studies*, vol. 13, no. 1, pp. 98–115, 2024. https://doi.org/10.36941/ajis-2024-0008

[6] J. P. Seclen-Luna, P. Moya-Fernandez, and C. A. Cancino, "Innovation and performance in Peruvian manufacturing firms: Does R&D play a role?," *RAUSP Management Journal*, vol. 58, no. 2, pp. 143-161, 2023. https://doi.org/10.1108/RAUSP-07-2022-0176

[7] R. Arteaga and O. Saavedra, "Process management model of the district municipality of José Leonardo Ortiz in the Chiclayo province in the Lambayeque- Peru department," M.E. Thesis, Pedro Ruiz Gallo National University, Peru, 2018.

[8] J. Bravo, "Proposal to improve the performance of the collections management process of COSAS&HOGAR SAC by applying the Business Process Management (BPM) methodology. – Chiclayo 2017," M.E. Thesis, Pedro Ruiz Gallo National University, Peru, 2018.

[9] G. Nava, F. Sánchez-Galván, H. Bautista-Santos, and R. García, "Business models and their influence on the service sector: Literature review," *Revista EDUCATECONCIENCIA*, vol. 30, no. 35, pp. 1–15, 2022.

[10] L. J. Jiménez Silva, "Business management for accounting support as an economic contribution to small and medium-sized enterprises in the City of Pilar, Period 2023," *Ciencia Latina Revista Científica Multidisciplinar*, vol. 7, no. 5, pp. 6314-6332, 2023. https://doi.org/10.37811/cl_rcm.v7i5.8225

[11] G. A. Diaz Muñoz and D. A. Salazar Duque, "Quality as a strategic tool for business management," *Podium*, vol. 39, pp. 19–36, 2021. https://doi.org/10.31095/podium.2021.39.2

[12] S. Madero-Gómez and D. Rodríguez-Delgado, "Relationship between McGregor's X and Y theories, ways of rewarding and people's job satisfaction," *Social Science*, vol. 13, no. 1, pp. 95-107, 2018.
[13] F. A. Sánchez Flores, "Epistemic fundamentals of qualitative and quantitative research: Consensus and dissensus," *Revista Digital de Investigación en Docencia Universitaria*, vol. 13, no. 1, pp. 101-122, 2019. https://doi.org/10.19083/ridu.2019.644
[14] A. Otero-Orteaga, "Research approaches. ResearchGate," 2018. https://www.researchgate.net/publication/326905435_ENFOQUES_DE_INVESTIGACION
[15] R. Hernández-Sampieri and C. Mendoza Torres, *Research methodology: Quantitative, qualitative and mixed routes*. New York: McGraw Hill, 2018.
[16] P. I. Vizcaíno Zúñiga, R. J. Cedeño Cedeño, and I. A. Maldonado Palacios, "Scientific research methodology: A practical guide," *Ciencia Latina Revista Científica Multidisciplinar*, vol. 7, no. 4, pp. 9723-9762, 2023. https://doi.org/10.37811/cl_rcm.v7i4.7658
[17] J. Arias and M. Covinos, *Research design and methodology*. Lima, Peru: Enfoques Consulting EIRL, 2021.
[18] D. Alan and L. Cortés, *Processes and fundamentals of scientific research*. Machala, Ecuador: Editorial UTMACH, 2018.
[19] C. A. Ramos-Galarza, "Editorial: The myth of sample size," *CienciAmérica*, vol. 9, no. 1, pp. 1-6, 2020. https://doi.org/10.33210/ca.v9i1.264
[20] M. Rodríguez and F. Mendivelso, "Cross-sectional research design," *Revista Médica Sanitas*, vol. 21, no. 3, pp. 141-147, 2018.
[21] C. Arispe, J. Yangali, M. Guerrero, O. Lozada, L. Acuña, and C. Arellano, *Scientific research: An approach for graduate studies*. Quito, Ecuador: UIDE, 2022.
[22] L. F. Mucha Hospinal, R. Chamorro Mejía, M. E. Oseda Lazo, and R. D. Alania-Contreras, "Evaluation of procedures used to determine the population and sample in postgraduate research work," *Desafíos*, vol. 12, no. 1, pp. 50-57, 2021. https://doi.org/10.37711/desafios.2021.12.1.253
[23] L. Jiménez, "Impact of quantitative research today," *Convergence Tech*, vol. 4, no. 4, pp. 59-68, 2020. https://doi.org/10.53592/convtech.v4iIV.35
[24] H. Feria, M. Matilla, and S. Mantecón, "The interview and the survey: Methods or techniques of empirical inquiry?," *Didactics and Education*, vol. 6, no. 3, pp. 62-79, 2020.
[25] G. Gómez, "Business process management model and productivity in the company Corporación Visión SAC, Lima 2020," M.E. Thesis, Cesar Vallejo University, 2020.
[26] M. Medina-Díaz and A. Verdejo-Carrión, "Validity and reliability in learning assessment through active methodologies," *Alteridad*, vol. 15, no. 2, pp. 270–284, 2020.
[27] M. Matta, "Process management, and productivity in restaurant workers in northern Lima, 2022," M.E. Thesis, Cesar Vallejo University, 2022.
[28] H. Rázuri, "Process management for productivity in the company Ingesagua, Lambayeque," M.E. Thesis, Cesar Vallejo University, 2021.
[29] R. Rivera, "Productivity in a service company, Lima 2019 to 2021," M.E. Thesis, Cesar Vallejo University, 2022.
[30] B. Sookdeo, "Using method analysis to improve productivity: Case of a tap manufacturer," *International Journal of Productivity and Performance Management*, vol. 70, no. 6, pp. 1470-1486, 2020. https://doi.org/10.1108/ijppm-05-2019-0253