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Relationship Between Quality Management And Productivity In The Company Constructora Kaliss, Juliaca – 2022

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Abstract

The general objective of the following research was to "determine the relationship between quality management and productivity in the construction company Kaliss, Juliaca-2022".

The present inquiry belongs to the quantitative approach, with typology of applied research, non-experimental research design of transversal cut, constituted by 20 workers, executed with a non-probabilistic sampling by convenience, it was carried out with a technique the questionnaire of 20 items, achieving as a result the quality management and productivity in the construction company Kaliss with a result of rs = 0.667, where it indicates that if there is moderate positive correlation between existing variables of research. Accordingly, between quality management and productivity efficiency in the Kaliss construction company the Spearman's Rho correlation coefficient shows the result of rs = 0.577; which indicates that there is moderate positive correlation between the research variables. Finally, there is enough evidence that there is a relationship between quality management and productivity efficiency in the Kaliss construction company with the result rs= 0.512; which affirms that there is a moderate positive correlation between the study variables. Finally, it was concluded that there is a relationship between quality management and productivity in the Kaliss company, with a level of 5% significance. Therefore, we recommend that priority should be given to the use of quality standards (ISO 9001) and productivity in companies will increase.

Keywords: *management, quality, productivity in the company, efficiency, effectiveness*.

Introduction

According to , in his r[1]esearch he had as purpose to establish the relationship with the management of Quality in the Productivity of COVISOL company, With a non-experimental descriptive, correlational design which examines the quantitative population, which consists of 80 inhabitants of the construction company COVISOL carried out the research to 100% of inhabitants. Data are collected through questionnaire surveys. The results obtained showed the existing moderate relationship between variables: HR or Spearman and a bilateral scope of ,000, other studies should consider planning, for an exact quality management it is necessary to promote the adoption of standards, quality and in such a way increase the productivity index in the company. In conclusion, it is accepted that there is a moderate correlation between quality management and productivity in the construction company COVISOLS.A.(Yumpo, 2020)

(Flores & Ramos, 2018), in his thesis he aimed to evaluate productivity and know the causes of low productivity in construction sites in the city of Arequipa. With a correlational design that experiments quantitatively with a certain amount of population

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that were surveyed, and the results achieved is of an intermediate level of productivity of 27.7%. On the other hand, with an average Pareto organizational chart, the main reasons for the decrease in productivity of the 10 works are: waiting times, breaks, transportation, travel. Keeping in mind, the 4 worked at 34% of the task time, productivity will be optimized if we focus on minimizing the time we spend on these jobs.

Referential and Methodological Framework

1.1. Frame of reference

1.1.1. Quality Management

1.1.1.1. Definition of quality management.

Says; It is the way in which management plans for the future, implements programs and monitors the results of the quality function with a view to its continuous improvement.

1.1.1.2. Principles of quality management.

"The principles that guide the quality management system are important to discuss the ISO 9001-2015 approach", can be used by a good company manager in order to meet the goal set in the job. According to : "The principles of quality management are: (p.8)(ISO 9001, 2015)

- Customer Focus
- Leadership
- People Engagement
- Process Approach
- Improvement
- Evidence-based decision-making
- Relationship Management

1.1.2. Process Management

(Sanchez, 2010) A process is understood as a set of interrelated activities and resources that are transformed into a product. The purpose of a process should be to add values to input elements.

1.1.2.1. Assurance control, established in processes

According to the ; "The approach is based on Quality Management System processes, whose purpose is to improve the efficiency and effectiveness of an organization to achieve the defined goals, where it also includes improving customer satisfaction by meeting requirements. (ISO 9001, 2015)

Generally, the processes that can be detailed within the organization are:

- Management Responsibilities
- Resource Management
- Realization of the product
- Measurement, analysis and improvement"

1.1.3. Measurement, analysis and improvement.

(Gonzales, 2016) mentions: That the purpose is to continuously improve the organization's ability to deliver products that meet the requirements:

- Monitoring & Measurement
- Control of the non-compliant product
- Study of data provided by the processes
- Improvement action.

1.1.4. Production

1.1.4.1. Productivity.

(Rodriguez, 2015) Productivity is described as the efficient use of resources, labor, capital, land, materials, energy, information in the production of various goods and services.

1.1.4.2. Efficiency.

(Rodriguez, 2015) It is the ability to do things correctly. Obtain the result of products or services by reducing the use of resources by reducing operating costs.

1.1.4.3. Efficiency.

(Rodriguez, 2015) "It is the ability to choose the appropriate targets."

1.2. Research methodology.

1.2.1. Type of research

According to (Valderrama, 2017) It is known as a type of applied research, also active, dynamic, practical, empirical. Since it is according to its finding and theoretical contributions, it also seeks to know, do, act, contribute and modify.

1.2.2. Level of research

The following research pertains to correlational level. According to him, this type of study aims to know the degree of association between two or more concepts, categories or variables, in a particular context. (Valderrama, 2017)

1.2.3. Research Design

According to Valderrama (2017), is called non-experimental cross-sectional design. Since it runs without manipulating variables.

Table 1 Variable Operationalization Matrix

Variable	Conceptual definition	Dimension	Indicators	Item	Scale of Values	Measuring Scale
Quality Management	It is a group of elements interrelated with a company that manages in a planned way to satisfy its customers.	Resource & Activity Management Process	Problem Identification	1,2	Always = 4 Almost always = 3 Sometimes =2 Never = 1	Ordinal
			Troubleshooting	3, 4, 5		
		Measurement, analysis and improvement process	Improvement activities	6, 7	Always = 4 Almost always = 3 Sometimes =2 Never = 1	
			Service Evaluation	8, 9, 10		
Productivity in the company	The company must be able to achieve its objectives, considering the resources when producing the goods and services and are achieved.	Efficiency	Processes	11, 12, 13	Always = 4 Almost always = 3 Sometimes =2 Never = 1	Ordinal
			Results	14, 15		
		Efficiency	Goals	16,17	Always = 4 Almost always = 3 Sometimes =2 Never = 1	
			Objectives	18,19,20		

Note. Source: Authors' own creation.

1.2.4. Population, Sample and Sampling

1.2.4.1. Population.

According to , a population is the set of objects or people from which the study sample will be selected. The research to be conducted; It has a total of 20 senior management workers who constitute the total number of workers in the construction company Kaliss, Juliaca - 2022.(Valderrama, 2017)

1.2.4.2. Sample.

(Valderrama, 2017), indicates that the sample is a representative subset of a universe or population. In the study, non-probabilistic sampling is taken, intentional, therefore, it is carried out so that the population is identical and is made up of a single group of 20 workers, specified by:

Table 2 Participation model.

Charge	Quantity
General Manager	1
Construction Resident	1
Technical Office Engineer	2
Security Engineer	1
Quality Engineer	1
Accounting	1
Administration	2
Grocer	1
Field Seat	1
Laboratory Quality Technicians	1
Other Employees	8

Note. Source: "Own creation".

1.2.5. Data Collection Techniques and Instruments

The following inquiry will be carried out with a quantitative approach and methodologies for collecting information will be developed, such as: survey, through several questions for a group of the population, observation techniques, field activities and documentation of the work under study. - Survey: to collect, directly from the research variable.

The survey will indicate the margin of error, as it is influenced by the subjectivity of the surveyed population. - Observation: the progress of the company's processes and work dynamics is deduced. Document analysis: information is collected from: books, theses, journals, etc.

Data Processing Techniques

The instrument of the study is through surveys that were worked with the questionnaire,

which is a tool that will be made up of 20 items, which are divided into variables and indicators, it is applied in the indicated model, and in the field collection tool where the control and camera formats are used.

1.2.6. **Validation and reliability of the instrument.**

The documents are verified by two quality management experts and a statistical engineer. The questionnaire is made up of 20 items divided into 4 indicators, which are representative for the purpose of this study. To this end, results obtained from the 10 items of the Quality Management variable and 10 items of the Productivity in the company variable were taken into account.

Table 3 Quality Management Reliability

Reliability	
Cronbach's alpha	N of Elements
0.686	10

Note. Source: SPSS Software, V25.

Table 4 Production Reliability in the company.

Reliability	
Cronbach's alpha	N of Elements
0.578	10

Note. Source: SPSS Software, V25.

We worked with the database, we proceeded with the SPSS(spv) software program, using the binomial test for expert opinions, it is shown that the measurement instrument is valid in terms of content, as it is in the acceptance by an assessment "Sig. (bilateral) = 0.001".

Results

1.3. Research Analysis

In the research, we decided to indicate in detail the results of the studied population according to the variables of quality management and productivity in the company, considering the general and specific objectives formulated according to the study.

The purpose of the study is to determine the relationship between quality management and productivity in the company, which was executed with the SPSS(spv) version 25 program and the Excel(xlsx), using Spearman's Rho correlation test model (rs), the study was carried out with 20 collaborators of the company Constructora Kaliss, Juliaca–2022. The results obtained for the 10 items of the Quality Management variable and 10 items of the Productivity variable were discussed.

Table 5 Proof of normality of quality and productivity management in the construction company Kaliss.

Normality Tests						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistical	Gl	Gis.	Statistical	Gl	Gis.
QUALITY MANAGEMENT	,234	20	,005	,814	20	,001
PRODUCTIVITY	,158	20	,200*	,870	20	,012

*. "This is a lower limit of true significance.

a. Correction of Lilliefors' Signification"

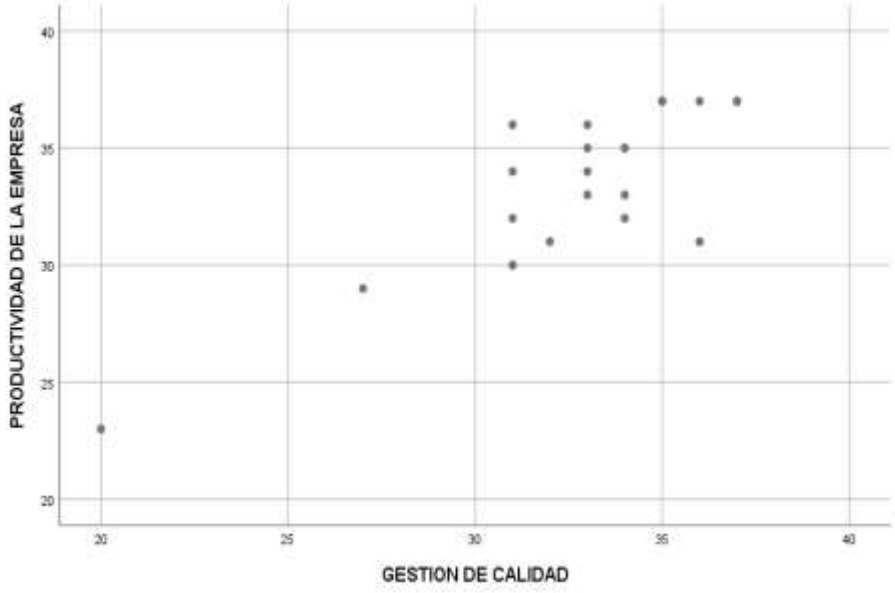
Note. Source: SPSS Software, V25.

For the normality test, the criterion of sample size was considered, when n>50, for which the Kolmogorov-Smirnov test should be used, and when n<30 or n<50 should be applied, Shapiro-Wik should be applied, but when the results of these tests are less than 0.05, we affirm that the distribution is not normal. therefore, Spearman's Rho test should be used; But if they are greater than 0.05, they are said to be normal, so Pearson's statistical test will be used.

Then; Table 5 of the normality test, considers that the Shapiro-Wilk test, the result of Sig. value is less than 0.05, which shows that the distribution of data is not normal, therefore, in the following article the statistical test of Spearman's Rho correlation coefficient (rs) should be used in order to observe the relationship of the study variable.

According to the general objective: Figure 1 presents a point cloud, which shows the relationship between the variables: quality management (X) and productivity in the company (Y), and for the result of point dispersion the analysis of the dispersion of the points on the ordinal measurement scale was used.

Figure 1 Scatter plot of variables (X) and (Y)



"Coeficiente de correlación de Rho de Spearman"

Table 6 Correlation between quality management and productivity in the construction company Kaliss, Juliaca – 2022.

Correlations

			QUALITY MANAGEMENT	PRODUCTIVITY IN THE COMPANY
Spearman's Rho	QUALITY MANAGEMENT	Correlation coefficient	1,000	,667**
		Follow-up (bilateral)	.	,001

	N	20	20
PRODUCTIVITY IN THE COMPANY	Correlation coefficient	,667**	1,000
	Follow-up (bilateral)	,001	.
	N	20	20

**. The correlation is significant at the 0.05 level (two-sided).

According to Table 6: Spearman's Rho correlation coefficient (rs) variable of quality and productivity management in the Kaliss company, rs = 0.667 of the correlation coefficient was obtained; This shows that there is a moderate positive correlation between the variables of the present research study according to the objective.

Table 7 Correlation between quality management and efficiency.

Correlation

			QUALITY MANAGEMENT	EFFICIENCY
Spearman's Rho	QUALITY MANAGEMENT	Correlation coefficient	1,000	,577**
		Follow-up (bilateral)	.	,008
		N	20	20
	EFFICIENCY	Correlation coefficient	,577**	1,000
		Follow-up (bilateral)	,008	.
		N	20	20

**. Significant correlation according to level 0.05 (two-sided).

Table 7 of Spearman's Rho correlation coefficient between the quality and efficiency management variables was rs= 0.577; This shows that there is indeed a moderate positive correlation.

Table 8 Correlation Between Quality Management and Efficiency

Correlations

			QUALITY MANAGEMENT	EFFICIENCY
Spearman's Rho	QUALITY MANAGEMENT	Correlation coefficient	1,000	,512*
		Follow-up (bilateral)	.	,021
		N	20	20
	EFFICIENCY	Correlation coefficient	,512*	1,000
		Follow-up (bilateral)	,021	.
		N	20	20

*Significant correlation at the 0.05 level (two-sided).

In Table 8, according to Spearman's Rho correlation between quality management and effectiveness, the correlation coefficient rs= 0.512 was achieved; which indicates that there is a moderate positive correlation.

Discussion

According to the study carried out and considering the results obtained, it is feasible to carry out the following discussion:

The general hypothesis of our research is to verify if there is a relationship between quality management and productivity in the construction company Kaliss, Juliaca – 2022., which leads to a result of moderate correlation with rho=0.667 and P=0.001, where these results coincide in the research carried out where its result is moderate correlation with rho=0.528 and P=0.000. (Yumpo, 2020)

Likewise, Castillejo (2017), with his thesis quality management system and its relationship with the productivity of the rigid pavement construction company, Huaraz - 2016, in one of his conclusions states that it has a positive correlation (0.611) and a (p= 0.000). In conclusion, it indicates that there is a demonstrative relationship between the research variables.

Therefore, it is stated that there is a moderate correlation between the research variables. The authors' contributions are reliable, where they show similar results in the Kaliss company.

Conclusions and Recommendations

1.4. Conclusions

According to Table 6, Spearman's Rho correlation coefficient (rs) of the variable quality management and productivity in the company, giving a result rs = 0.667; of the correlation coefficient shows that there is a moderate positive correlation between the research variables. Therefore, the validation of the general hypothesis, the Sig. value of 0.001 is considered to be less than 0.05; This shows that the null hypothesis must be refuted, which is why the alternative hypothesis of investigation is admitted. In addition, it is concluded that there is sufficient certainty of the existence of a relationship between quality management and productivity in the construction company at 5% of the significance level.

In addition, Table 7 of Spearman's Rho correlation coefficient shows rs = 0.577 according to quality management and productivity efficiency in the company, which reveals that there is a moderate positive correlation between the research variables. Therefore, the validation of the specific hypothesis, the Sig. value of 0.008 is less than 0.05; therefore, the null hypothesis (Ho) must be refuted and the alternative hypothesis (Ha) is assumed. Finally, there is sufficient evidence of the relationship between quality management and productivity efficiency in the construction company Kallis with a 5% significance level.

Finally, according to Table 8 of Spearman's Rho correlation between quality management and productivity effectiveness in the company, the correlation coefficient result rs= 0.512 was achieved; therefore, it shows us that there is a moderate positive correlation between the research variables, which validates the specific hypothesis, with a Sig. result of 0.021, it is less than 0.05; therefore, the null hypothesis (Ho) should be refuted and the alternative research hypothesis (Ha) should be assumed. Finally, there is sufficient evidence of correlation between quality management and productivity effectiveness in the construction company Kaliss at the level of the 5% significance level.

1.5. Recommendations

- By implementing the quality management system (ISO 9001), its purpose is to improve productivity in the construction company Kaliss, Juliaca -2022.

- Continuously monitor and control the processes so that this meets the objectives projected in the company and optimizes the percentage of productivity in the company Constructora Kaliss, Juliaca – 2022.

- Inform all the company's workers about the processes and evaluate them in order to have a better management of productivity.

Bibliographic references.

Brocka & Brocka. (2014). Quality Management. Editor.

Cadillo Tiburcio, C. K. (2019). "Quality Management and Control of Structures in the Construction of the Laura Ester Rodriguez Duranto Pavilion of the National University of Barranca¨. CANYON.

Espinosa, J. L. (2017). Employee Engagement and its Impact on Productivity in a Service Company. Universidad Peruana de Ciencias Aplicadas, 31.

Fernández López, A. O., Jara Ortiz, C. A., & Jara Ortiz, R. (2019). Optimization of production indicators of works, to improve productivity, with the implementation of BIM tools, in construction projects, in the university sector, in Lima, Peru. FILE.

Flores, E. M., & Ramos, M. E. (2018). Analysis and evaluation of productivity in road construction works in the city of Arequipa.

Gonzales Ortiz, O. C., & Arciniegas Ortiz, J. A. (2016). Quality Management System - Theory and practice under the ISO standard. Bogotá: ECOE.

Gonzales, F. (2016). Quality management. MMcGraw-Hi.

ISO 9001, N.I. (2015). Quality Management System. Fifth.

Juran, J. (1993). Quality Control Manual. Mexico: Reverte.

Rodríguez, R. (2015). Construction Operations Management. Católica de Chile: Universidad.

Sanchez, J. V. (2010). Quality Management (Pyramid). Pyramid.

Valderrama, S. M. (2017). Steps for the elaboration of scientific research projects and theses. 7th ed.

Yumpo, C. O. (2020). Quality management and its relationship with the productivity of the construction company COVISOL S.A., Chiclayo - 2020.