v. 2, n. 16, 2022

Scientific Journal of Applied Social and Clinical Science

FACTORS INFLUENCING PAVES PRODUCTION VOLUME AT CONSTRUTORA DE NAMPULA IN APRIL 2019

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Abstract: This scientific article aims to analyze the factors that influence the production capacity of paves of a construction company in the province of Nampula, in the month of April of the year 2019, applying tools of quantitative methods to determine the influence of the workers' profile on the production capacity, for this purpose, documentary research was carried out to collect data on: age, technical training of paves, practice of physical exercises and production volume of each worker of that construction company. For the article presented, I hope to improve the degree of importance of statistics as a solution to problems and the use of quantitative methods for the strategic planning of the company.
Keywords: Production volume; Analysis; Quantitative methods.

INTRODUCTION

For Azevedo (2011), The introduction includes, in the order deemed most convenient, the elements of presentation of the research work topic.

According to Andrade (2009), Statistics is part of the operational research area of study that offers tools to identify problems through their symptoms and seek to solve them in order to make the right decision.

For Santos (2014), when analyzing a company, organization or business in its main areas, namely, finance, production, marketing and human resources, it is evident the application and influence of quantitative methods, either directly or indirectly in each one. of these elements.

In this article I intend to analyze whether trained workers affected the production capacity of concrete paves in April 2019, using quantitative methods tools.

The pavé is: pre-molded pieces formed by water, cement, sand that are seated on a layer of sand and locked together by lateral containment and by friction between the pieces. These types of pieces can be used in several places, being very common to be found in everyday life on streets, roads, squares, parks and garages.

LITERATURE REVIEW

For Stigler (1986), statistical methods were developed as a mixture of science, technology and logic for the solution and investigation of problems in various areas of knowledge.

The production of peas has grown dramatically, especially in Europe, which today has around half of the world's production and the greatest growth potential.

For Hallack (2001), the pre-molded pieces of paves appeared after the 2nd World War during the reconstruction of Europe as an alternative to the clay blocks used previously. In Brazil, the paving technique with paves appears in the 70's still very incipient and often without meeting the minimum criteria.

According to Cruz (2003), it was only in the 1970s that Canada and the United States began to appear both in the export of manufacturing equipment and in the use of these types of parts.

METHODOLOGY

According to Gil (2002), the case study consists of the deep and exhaustive study of one or a few objects, in order to allow a broad and detailed knowledge.

According to Yin (2001), the case study is chosen when examining contemporary events, but when relevant behaviors cannot be manipulated.

The present work was based on case study procedures. The study has a total sample of 24 workers from a construction company in the city of Nampula in the month of April 2019, determined enough to be effective in collecting data.

Data collection was elaborated through documentary research provided by the

company itself, they were processed and organized using Microsoft Office software (Word and Excel tools). In the organization of statistical data, tables and graphs are used.

RESULTS

Table 1 shows the maximum and minimum of the variables (Age and Production volume), as well as the median and standard deviation, it is important to highlight that these, total 24 observations.

Thus, we have the maximum age of 65 years, the minimum age of 19 years, and the average age of workers 38.45, it can be verified that the maximum monthly production is 3320 paves, the minimum monthly production is 2050 paves and the average monthly production is of 2685,125, it is noted that the difference between the maximum production of paves and the minimum production of paves is 1270.

Looking at the table, it is noted that most pavé workers have technical training and their difference with those who do not have technical training is 4 more workers, it can also be noted that there are more workers who practice physical exercises and that its difference with the number of workers who do not practice physical exercises is 3 more workers.

This bivariate statistical analysis has the function of relating the dependent variable, in this case (production volume) with the remaining variables, one at a time.

In table 3 we see that:

-Between the volume of paves production and age, there is a negative correlation of -11.26 %, that is, the greater the age of the workers, the lower the volume of paves production.

-Between the production volume of paves and technical training of paves, there is a positive correlation of 53.73%, that is, the greater the number of workers with technical training of paves, the greater the volume of paves production.

- Between the production volume of cobblestones and the practice of physical exercises, there is a positive correlation of 42.17%, that is, the greater the number of workers who practice physical exercises in the company, the greater the volume of cobblestone production.

In table 4 we can see that the adjusted determination coefficient is 41.68%, and the model is significant because it presents a probabilistic P of (0.31%<5%).

FINAL CONSIDERATIONS

From the article we can conclude that the production process can and must be controlled by statistical tools, in this article we tried to evaluate and explain some of the factors that influence the production capacity and that these factors directly affect the production volume, with this it can be It can be said that after the statistical analysis it becomes possible to define strategies to increase the volume of paves production.

Variable	Note	Average	Median	Standard deviation	Minimum	Maximum
Age	24	38.45833	34	14.98689	19	65
Production volume	24	2685.125	2838.5	484.4722	2050	3320

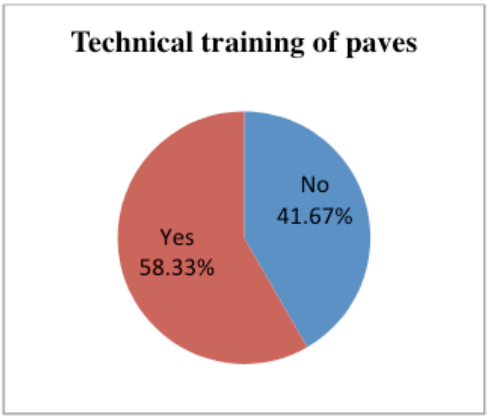
Table 1: Distribution of frequencies and interpretation of their values

Source: (Elaborated by the author, 2021)

Variable	Freq.	Percent	Cum.	Variable	Freq.	Percent	Cum.
Technical training of paves				Practice of physical exercises			
No	10	41.67	41.67	No	11	45.83	45.83
Sim	14	58.33	100.00	Sim	13	54.17	100.00

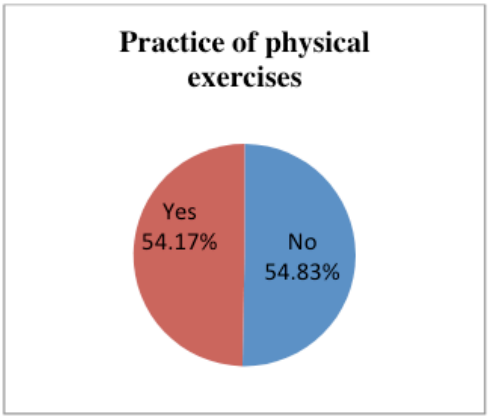
Table 2 Distribution of frequencies and interpretation of their values

Source: (Elaborated by the author, 2021)



Graph 1 : Technical formation of paves (%)

Source: (Elaborated by the author,, 2021)



Graph 2: Practice of physical exercises (%)

Source: (Elaborated by the author, 2021)

	Age	Technical training of paves	Practice of physical exercises
Production volume	-0.1126	0,5373	0,4217

Table 3: Bivariate statistical analysis

Source: (Elaborated by the author, 2021)

Number of notes	24
F(3, 20)	6.48
Prob > F	0.0031
R-squared	0.4929
Adj R-squared	0.4168
Root MSE	369.99

Production volume	Coefficient	Standard deviation	t	P > | t |	[95% confidence interval]	
Age	-3.435465	5.149171	-0.67	0.512	-14.17645	7.305518
Technical training of paves	495.4274	157.8189	3.14	0.005	166.223	824.6318
Practice of physical exercises	339.0077	156.1935	2.17	0.042	13.19366	664.8217
_cons	2344.619	239.3399	9.80	0.000	1845.364	2843.873

Table 4 Multivariate analysis - Multiple analysis and regression

Source: (Elaborated by the author, 2021)

REFERENCES

Azevedo, M. (2011) *Teses, Relatórios e Trabalhos Escolares 8.ª Edição*. Universidade Católica, Portugal.

Andrade, E. L. (2009) *Introdução à pesquisa operacional: métodos e modelos para análise de decisões*. (4.ªed.).– Rio de Janeiro.

Cruz L. (2003) *Pavimento intertravado de concreto: Estudo dos elementos e métodos de* dimensionamento.

Gil, Antônio Carlos (2002) *Como elaborar projetos de pesquisa*. (4.ªed.). São Paulo: Ed. Atlas.

Hallack, A. (2001). *Pavimento intertravado: uma solução universal*. Revista Prisma. São Paulo.

Santos, B. (2014). *A Importância e o Uso da Estatística na Área Empresarial: uma Pesquisa de Campo com Empresas do Município de Eloi Mendes.* Minas Gerais. Atlas.

Stigler, S. M. (1986) The history of statistics: the measurement of uncertainty before 1900. Cambridge, USA: The Belknap Press of Harvard University Press.

Yin, R. K. (2001). *Estudo de caso: planejamento e métodos*. (2.ªed.). Porto Alegre: Bookman.