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Study of Integral Logistics in areas of a supermarket, in the city of Villahermosa, Tabasco, Mexico, for a comprehensive improvement proposal

Estudio de la Logística Integral en áreas de un supermercado, en la ciudad de Villahermosa, Tabasco, México, para una propuesta integral de mejora

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Abstract

The central purpose of the project is the study of Integral Logistics in which it is analyzed in two specific areas: Human Resources and Warehouse. Both areas belong to an internationally renowned supermarket located in the city of Villahermosa, Tabasco, Mexico. The objective of the study is to collect information on the "Before, During, and After" of the development of the activities of the aforementioned departments, in order to collect the necessary information and prepare a Measurement Instrument structured to suit the organization under study. Said Instrument contains specific questions according to the activities carried out in each area, to subsequently measure them through the Likert scale. This Instrument allows data to be collected in a quantitative way, highlighting the areas of opportunity of the different departments in question, granting items as a reference to achieve an interpretation of the percentage of responses obtained. Said data collection instrument was completed with the support of the General Manager of the branch understudy, which was carried out through the Microsoft Teams platform, where the necessary information was obtained in order to later be interpreted according to the elements obtained. These helped to capture the results obtained in pie charts and develop a proposal for improvement.

Measuring instrument, Logistics, Likert

Resumen

El propósito central del proyecto es el estudio de la Logística Integral en el cual se analiza en dos áreas específicas: Recursos Humanos y Almacén. Ambas áreas pertenecen a un supermercado de renombre internacional ubicado en la ciudad de Villahermosa, Tabasco, México. El estudio tiene como objetivo recabar información del “Antes, Durante y Después” del desarrollo de las actividades de los departamentos anteriormente nombrados, para así recabar la información necesaria y elaborar un Instrumento de Medición estructurado a la medida de la organización en estudio. Dicho Instrumento contiene preguntas específicas de acuerdo a las actividades que se llevan a cabo en cada área, para posteriormente medirlas a través de la escala de Likert. Este Instrumento permite recolectar los datos de una forma cuantitativa, resaltando las áreas de oportunidad de los distintos departamentos en cuestión, otorgando ítems como referencia para lograr tener una interpretación con el porcentaje de respuestas obtenidas. Dicho instrumento de recolección de datos fue completado con el apoyo del Gerente General de la sucursal en estudio, la cual se llevó a cabo a través de la plataforma Microsoft Teams, dónde se obtuvo la información necesaria para así posteriormente ser interpretada de acuerdo con los ítems obtenidos. Éstos ayudaron para plasmar los resultados obtenidos en graficas de pastel y desarrollar una propuesta de mejora.

Instrumento de medición, Logística, Likert

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Introduction

For today's organizations, Integral Logistics is a concept that seeks to improve the quality of the services and products they offer. With the characteristics of the globalized and changing market, the management of products has become a challenge to consider, which is why Integral Logistics seeks to efficiently integrate all areas and processes, with the aim of delivering quality to consumers.

The dynamism of the markets requires faster service from all players, with a fast supply chain adapted to the product to face the difficulties posed by omnichannel. In addition, the life cycle of products is shrinking more and more, which has a drastic impact on logistics processes and activities.

For a better understanding and organization, it is possible to divide the logistics of an organization into three phases, and call them: "Before, During and After". It is for this reason that this research seeks to develop a proposal for improvement based on a detailed study of the areas and processes of a system such as a supermarket, in order to propose an integral scenario that allows visualizing internal and external factors.

Methodology

The emergence of the idea

The figure graphically represents the methodological follow-up of the research.

Starting from phase 1, the thematic framework includes "Integral Logistics in Organizations".

Phase 2 is made up of the General Theme of the investigation and is called "Integral Logistics in the areas of a supermarket", delimiting the investigation.

Phase 3 specifies and expands the subject of study, consolidating the research and calling it "Study of Integral Logistics in areas of a supermarket, in the city of Villahermosa, Tabasco, Mexico, for a comprehensive proposal for improvement".

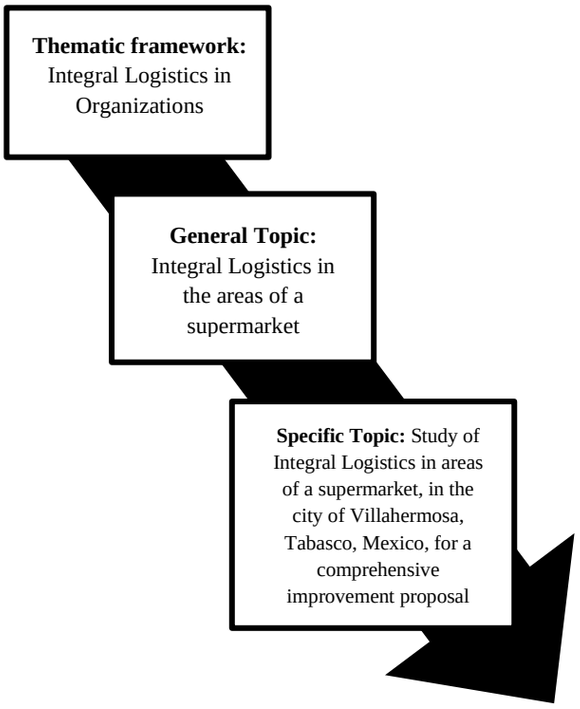

Figure 1 Methodological follow-up of the research
Source: Author's Perception

Identification of experts

The areas to be studied for this study are those of Human Resources and Warehouse, for which the leaders or managers of these areas were identified, it is worth mentioning that at all times the General Director of the organization was advised. At this stage of the process, the identified leaders will be called authors.

Once the authors have been identified, rounds of interviews are scheduled in which questions are asked about the domain of the study topic.

Subjectively, the researcher determines if the selected actors have knowledge of the topics covered, if they have the knowledge to continue with the investigation, this staff is called an expert.

Measurement instrument design

To achieve an integrated scenario and according to the current situation of the organization, it is necessary to design a measurement instrument integrating factors relevant to the subject of study. The instrument was designed with the information provided by the experts and by the General Manager of the company.

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The instrument considered dividing the logistics process into three stages, which are the following: Before logistics, During logistics, and After logistics.

The instrument counts a Likert scale where:

- 1 = Strongly Disagree.
- 2 = Disagree.
- 3 = Undecided.
- 4 = Agree.
- 5 = Totally Agree.

BEFORE	1	2	3	4	5
How much do you agree with the way in which the activities to be carried out during the workday are scheduled?					
How much do you agree with the use of local resources, such as planning software, among others?					
Do you consider the timing of distribution services to be correct or effective?					
Do you agree with the way the efficiency of suppliers is evaluated?					
Do you agree with how often suppliers are evaluated?					
Do you agree with the employee evaluation system or method?					
Does the organization carry out ergonomic studies for better employee productivity?					
Does the organization conduct market research?					
Does the organization have a good interrelation within the system?					
Do you think the organization has a good work environment scheme?					
Does the organization provide feedback on the processes to find possible points for improvement?					
Do you agree with the strategies that have been implemented to increase the reduction of unnecessary efforts?					

Table 1 Measuring instrument (Stage before logistics)
Source: Author's Perception

DURING	1	2	3	4	5
Have you had mishaps when carrying out your activities?					
Do you consider that the area has a correct Emergency Response Plan?					
Do you agree with the time periods that should be expected to maintain the facilities in your area?					
Do you think training is important?					
How much do you agree with the way the staff is trained to act in an emergency?					
Do you have effective communication between workgroups in your area?					
With respect to your area, do you consider that there is good management of the activities that are carried out?					
Is there coordination in the management of activities by the work team?					
Does your department correctly apply the QMS (Quality Management System)?					
Are plans or programs developed to improve staff performance?					
Is there an evaluation of the activities carried out in the area?					
Do you consider that developing a security plan and evaluating activities is of great importance for continuous improvement?					

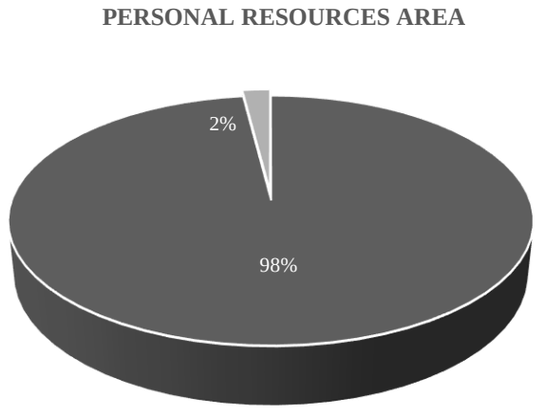
Table 2 Measuring instrument (Stage during logistics)
Source: Author's Perception

AFTER	1	2	3	4	5
Is internal communication promoted in the department?					
Is it important for the company to promote human talent?					
Does the department implement methodologies so that a team is competent and aligned with the strategies?					
Is there frequent training for the worker?					
Do they optimize logistics processes to obtain new tools?					
Does the company have information management systems (software or programs)?					
Does the company make evaluations once the processes are finished?					
Are effective delivery times observed and analyzed?					
Are proposals made for measures to reduce accidents or mishaps?					
Are the results of the customer satisfaction study analyzed?					
Does the organization monitor the results of applied innovations?					
Does the organization analyze the results of using the 5s?					

Table 3 Measuring instrument (Stage after logistics)
Source: Author's Perception

Results

The results of the Human Resources area are as follows:



Graphic 1 Global result of the measurement of the level of comprehensive logistics at the three levels in the Human Resources area
Source: Own elaboration

According to the information collected in the three stages of Logistics, in the area of human resources, it is represented in the graph that 98% of the activities that are developed in this department are carried out efficiently; however, there is a 2% in which we are shown the answer obtained from question 1 about the existence of mishaps when carrying out the activities, therefore, this means that there is no good management of the activities, because there is a probability that some of the workers are not properly trained, or that some worker does not carry out their activities correctly and makes the work team inefficient.

The results of the Warehouse area are as follows

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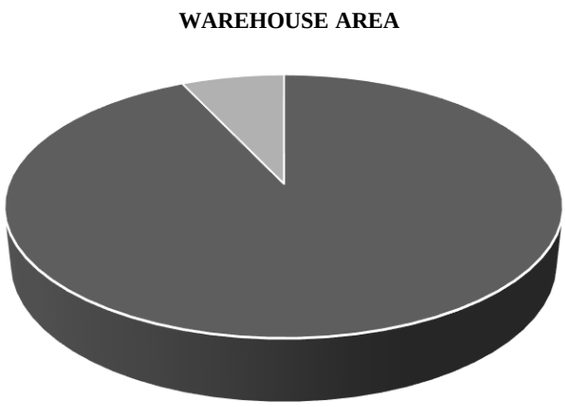

Graphic 2 Global result of the measurement of the level of comprehensive logistics at the three levels in the Warehouse area
Source: Own elaboration

When applying the measurement instrument in the Warehouse area, a result of 93% efficiency was obtained in most of the tasks carried out, in such a way that 7% is obtained as an aspect of improvement. It is interpreted that the warehouse department has as a negativity the lack of technological equipment, because these resources do not depend on them, since being a point of sale, they need an approval from the headquarters, in the same way the lack of supply of suppliers represents a deficiency, since sometimes they fail to satisfy the total need for the products.

Improvement proposal

Through the study in the departments of Human Resources and Warehouse of the supermarket, it has been possible to identify certain factors that are points of improvement to establish good planning of activities, for which a proposal has been proposed based on the efficiency of the processes. that are carried out in each area; therefore, it is sought that it be reliable and adjust to the needs of the same.

This proposal seeks to establish a positive impact within the areas studied, using the necessary tools to strengthen and improve service processes and other factors that represent deficiencies.

In such a way, a better performance of the workers can be obtained and at the same time reduce the mishaps that are generated during the development of the activities.

Key points of the improvement proposal

- The 9S methodology will be implemented, to obtain better performance by the workers who work in the Human Resources and Warehouse areas.

- A virtual training and education program will be established using software that is easily accessible on computers, tablets, smartphones, etc. This to prepare workers so that they adapt to the new guidelines and generate continuous improvement.

- Create a software development department in the Walmart company, which provides those computer systems necessary for use in the areas of human resources and warehouse, to avoid delays during the development of activities.

- Develop an emergency plan which includes your suppliers, to establish a set of strategies and actions to be carried out in an emergency.

- Create a data collection tool, which allows the worker to be aware of the conditions in which these areas of both human resources and the warehouse are found, establishing a software that allows the management and good control of the activities that are developed in the handling of the products.

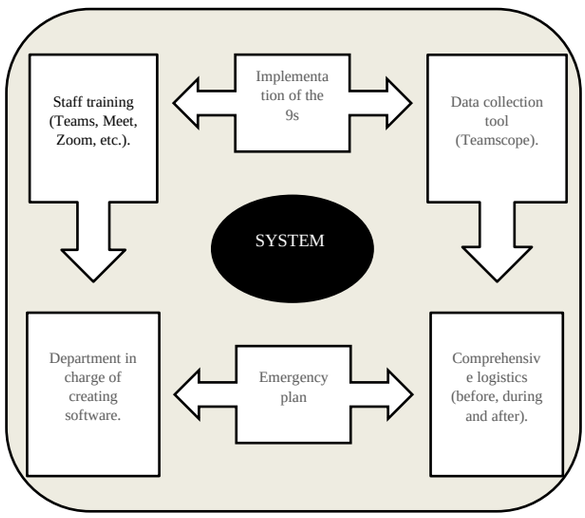

Figure 1 Improvement Proposal, Model
Source: Author's Perception

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Conclusions

In the preparation of this analysis, it can be seen that despite the fact that the supermarket is internationally recognized, it presents a minimum percentage of inefficiency in these areas.

When interpreting the graphs that were elaborated with the items obtained when applying the survey, it shows us that it is a company that has a great scope, but sometimes it has mishaps that influence the organization of all areas and in particular, Human Resources and Warehouse, since which are departments that promote the information flow activities of payroll employees, product reception and stock quality verification.

Through the general graphs of each department in which the human resources area shows us a certain degree of stability, however, in the warehouse area, certain instability is denoted.

Through the established studies, multiple factors can be seen that highlight some of the problems that the company acquires at a certain moment, in this way, the tools, and interpretations that were obtained from the results of the interview, indicate that there is a deficiency in the said departments, therefore, proposals for improvement are designed in the same way as their implementation model, in order to eliminate insufficiency in those areas and be able to achieve efficiency, in this way these mishaps are eliminated in said sites so that they are competitive they must be transformed, invest in technology and develop new methods, which help improve activities.

With the analysis obtained, it is concluded that a company is characterized as competitive, they must be updated to new methods, invest in technology, be more flexible and respond quickly to the market.

Therefore, the path towards an increasingly innovative future is part of the implementation of strategic tools that have been studied and optimized today, achieving great progress in the development of information, technology, and intellectual capital.

References

Bushell, J., Merkert, R. y Beck, MJ (2022). Preferencias de los consumidores para la colaboración de operadores en ecosistemas de transporte intraurbanos e interurbanos: Institucionalización de plataformas para facilitar MaaS 2.0. Investigación de Transporte Parte A: Política y Práctica, 160, 160-178.

Eriksson, E., Norrman, A. y Kembro, J. (2022). Comprender la transformación hacia la logística omnicanal en el comercio minorista de comestibles: una perspectiva de capacidades dinámicas. Revista internacional de gestión minorista y de distribución.

Riesenegger, L. y Hübner, A. (2022). Reducción del desperdicio de alimentos en las tiendas minoristas: un estudio exploratorio. Sostenibilidad, 14 (5), 2494.

Tang, D., Jia, X., Yang, Y. y Wang, Y. (2022). Un estudio sobre la ruta de mejora ambiental del distrito comercial en el distrito de Liangping, Chongqing. Nanotecnología para la Ingeniería Ambiental, 1-10.

Zhou, B., Zha, W., Ye, L. y He, Z. (2022). Un método dinámico de programación de manejo de Materiales basados en una máquina de aprendizaje extremo basada en la evolución diferencial autoadaptativa de aprendizaje de oposición de élite (EOADE-ELM) y una base de conocimiento (KB) para supermercados integrados en línea. Informática blanda, 26 (2), 763-785.

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