

Improvements in people management in warehouse logistics: Case study in sugar and alcohol plants

Melhorias na gestão de pessoas em logística de armazéns:

Estudo de caso em usinas sucroalcooleiras

Mejoras en la gestión de personas en la logística de almacenes:

Estudio de caso en ingenios azucareros y alcohólicos

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Abstract:

Warehouse management is responsible for operations, goods flow control and information. Logistics is one of the main activities related to handling and storage. With the Industrial Revolution, companies had to double their productive capacities to be able to meet national and international markets. During data collection, the main flaws in personnel management and movement within warehouses were verified. The article's objective was achieved as expected; where possible, communication failures and warehouse personnel management improvements were verified. The research method used was a literature review and on-site visit. Two internal managers of the companies applied the results obtained in the field research. By highlighting management failures, they could be improved through small investments. Future work in both companies should improve warehouse logistics and the utilization of their facilities.

Keywords: Operation; industry; movement; communication.

Resumo:

A gestão de armazém é responsável pelas operações de recebimento, armazenagem e separação de mercadorias, matérias primas e componentes, controle de fluxo de mercadorias e informações. A movimentação e armazenagem são duas atividades principais relacionadas à Logística. Com a revolução industrial, as empresas tiveram que aumentar as suas capacidades produtivas para que conseguissem atender os mercados nacionais e internacionais. Pela análise dos dados levantados, foram verificadas as principais falhas na gestão de pessoas e na movimentação dentro dos armazéns. O objetivo do artigo foi alcançado, no qual foram verificadas as possíveis falhas na comunicação e melhorias na gestão de pessoas em armazéns. O método de pesquisa utilizado foi uma revisão da literatura e estudo de caso. Os resultados obtidos na pesquisa de campo foram aplicados com dois gestores da área interna das empresas. Evidenciando as falhas nas gestões, as mesmas poderiam ser melhoradas, através de pequenos investimentos.

Palavras-chave: Operação; Indústria; Movimentação; Comunicação.

Resumen:

La gestión de almacenes se encarga de recibir, almacenar y separar mercancías, materias primas y componentes, controlar el flujo de mercancías y la información. La manipulación

y el almacenamiento son dos actividades principales relacionadas con la logística. Con la revolución industrial, las empresas tuvieron que aumentar sus capacidades de producción para poder atender a los mercados nacionales e internacionales. Mediante el análisis de los datos recopilados, se verificaron las principales fallas en la gestión de personas y en el movimiento dentro de los almacenes. Se logró el objetivo del artículo, en el que se constataron posibles fallos en la comunicación y mejoras en la gestión de las personas en los almacenes. El método de investigación utilizado fue la revisión de la literatura y el estudio de caso. Los resultados obtenidos en la investigación de campo se aplicaron con dos directivos del área interna de las empresas. Al poner de relieve las fallas en la gestión, se podrían mejorar a través de pequeñas inversiones.

Palabras clave: Operación; Industria; Conducir; Comunicación.

1. INTRODUCTION

Logistics is responsible for operations and control of the flow of goods and information. This category of economic activity is one of the oldest in all continents of the world. (Martins; Campos, 2005 *et al.* Ballou, 2015)

According to Ballou (2006), movement and storage are logistics-related activities, from raw materials to final consumption. The movement of products can reduce operating costs

through the flow of service information.

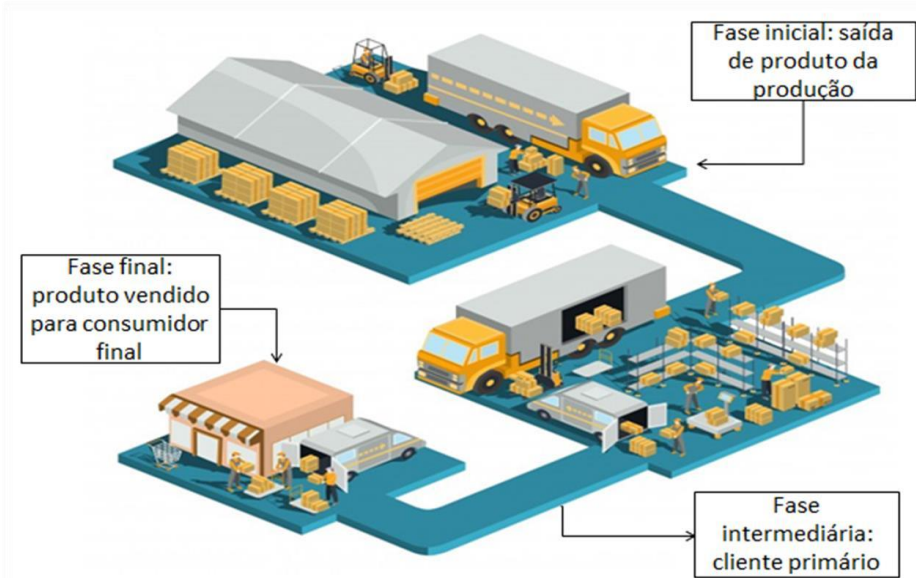
The first sugar mills appeared in Brazil around 1500, as the country's climate was suitable for growing sugar cane. Sugar mills appeared around 1800, during the Industrial Revolution, when the first equipment for grinding sugar cane appeared. (CCA Team, 2015)

During the First World War, there was a considerable increase in the number of these industries, given the increase in product prices. Most of these new industries were in the Northeast and in the state of São Paulo. (CCA Team, 2015)

During the Second World War, Brazilian sugar industries focused on doubling their production capacity. On the international market, sugar prices were constantly changing, and companies in the sector changed their strategies to remain profitable. (Machado, 2009)

Figure 1 shows the flow of warehouse logistics, from product storage and transportation to large distribution centers to sales in retail, supermarkets and exports.

Figure 1. Warehouse logistics flow, with initial, intermediate and final phases.



Source: Adaptation from ALFALOG (2009).

From the 1950s to the 1980s, logistics theories and practices emerged, enabling after-sales services and computerizing manual information. During this period,

the inventory control system and the barcode emerged (Ballou, 2015).

In 1973, with the oil crisis, the National Alcohol Program (PROÁLCOOL) was created. Its creation was to encourage the production and use of ethanol as an ecological fuel and a replacement for gasoline; this came to leverage the development of new producing regions in the country. (Theodoro, 2011)

In 2018, the country went through a diesel crisis due to the truck drivers' strike, demonstrating a category's strength and the system's fragility. The strike's main objective was to reduce fuel prices. The category immobilized the country to enforce their demands, stopping transportation and preventing goods from reaching their destinations. (Borges, 2018). This makes it clear that all links in a logistics chain must function correctly because a product and a consumer's desire to own it are useless if there is no link between them. (Martins; Campos, 2005)

In Brazilian agribusiness, there is a search for new varieties of sugarcane that are more productive and resistant to pests and diseases. The Agronomic Institute of Campinas (IAC) made a breakthrough in this new technology, where they biologically controlled pests in sugarcane fields. (Machado, 2009)

Brazil produced more than 641 million tons of processed sugarcane in the 2022 and 2023 harvests and is also one of the largest producers and exporters of sugar in the world, with 38.6 million tons produced and 27.8 million tons exported, which is equivalent to 20% of global production and 45% of world exports, respectively. The state of São Paulo alone is responsible for the largest sugar and ethanol production in the state. (Única, 2018)

Considering the scenario of the world's largest sugar producer and exporter, as previously explained, to maintain these conditions and enjoy the benefits, companies involved in this sector must keep up to date with its demands, given its significant expansion. Thus, the logistics for all this production must be efficient and fast to satisfy all customers. (Compre Rural, 2018)

People management is a set of practices and policies that welcome and reconcile expectations between employees and organizations so that both can perform their functions over the years and contribute as high-performance teams, promoting development and recognizing individual and collective contributions. (Dutra, 2016; Dutra, 2017)

According to Dutra (2017), people development must guide all subordinates to fully utilize their domain skills and promote actions to develop those that require improvement, creating opportunities for improved performance and career development.

Organizational culture is one of the most important aspects that organizations must value and often constitutes their reason for existence. It is up to the organization to promote its cultural adjustment concerning environmental changes, where it presents the best conditions for its development. (Gil, 2014)

Considering the context presented, the following question arises: What improvements are being adopted to improve people management in warehouse logistics in sugar and alcohol plants?

The objective of this work was to verify possible communication failures and improvements in people management that can interfere with warehouse logistics operations and, after recognizing the failures, propose possible improvements.

The specific objectives of this work were to *visit* the companies studied on-site, analyze improvements in people management and suggest possible advances in the sector to be studied.

In this context, people management must be carried out to obtain the best results, aiming at maximum performance, linked to the knowledge and skills necessary for the development of functions in general. This becomes a great challenge for the sector since the logistics of consumer goods can only occur in the best way if people management is effective and aligned with the company's purpose.

Thus, the present work is justified by addressing the issue of improvements in people management in warehouse logistics in sugar and alcohol plants.

2. MATERIALS AND METHODS

According to Xavier (2011), people management is increasingly important for companies. People in organizations are their most valuable assets, which is why companies invest a lot of their resources in training their employees, "mainly for managers, supervisors and leaders," who are the key people who control the entire process.

To maintain the organizational culture of stipulated and desired performances, growth needs to be individual and collective, increasing relationships between teams, encouraging the ability to take risks, communication, leadership, flexibility, planning, and having a culture of quality (Xavier, 2011).

According to Franzini (2019), circulation management within companies contributes to cost reduction and increases the efficiency of movement logistics with greater agility, quality and safety. Therefore, companies must invest in training for their entire team, focusing on their main movement activities.

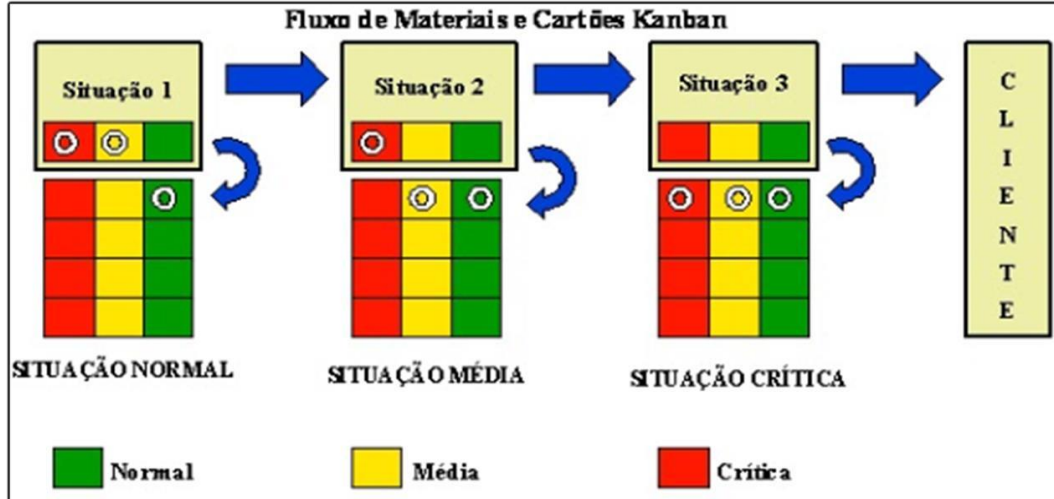
According to Mendes (2011), the most common failures in companies are failures in information dissemination, communication, interpersonal climate and lack of knowledge.

The Kanban board makes it easier to visualize all the tasks to be performed and those that have already been performed. This tool helps to identify bottlenecks and queues and checks the flow of production and inventory in companies.

A *Kanban* board has a flow of cards divided into three situations: normal (green), medium (yellow) and critical (red). The board helps expose all your tasks, avoiding communication failures in people management and internal logistics.

According to Silva (2011), possible improvements in people management, such as motivation, training and different actions for each employee, can reduce employee inequalities.

Figure 4. Example of a Kanban board, its card flows and their colors in situations.



Source: Adapted by Meneghello (2011).

The implementation of people management in organizations aims to develop a welcoming organizational environment for managers and employees, ensuring that all activities are carried out by the quality standards expected by the company. (Silva, 2011)

Therefore, by implementing these improvements in people management and warehouse logistics, from management to the factory floor, we can achieve better employee and company results.

2. METHOD

The work was conducted through a literature review to support the research contextually. On-site visits were also carried out to the two sugar and alcohol plants that were the object of this study. Through a case study, an analysis of possible improvements in people management in warehouse logistics was prepared.

Each of the companies visited produces an average of 1,500 tons of sugar per day, which guarantees the quality of the sugar and the increased time that the sugar can remain in stock, considering the storage conditions. This is especially true when comparing the benefits of an in-house warehouse and a third-party warehouse (pre-assembled).

The research is a case study that used qualitative data collection and systemic observation during *on-site visits* through field research.

Two logistics managers visited each unit, following and explaining all the processes and some of the difficulties in managing people in warehouse logistics.

2. RESULTS AND DISCUSSIONS

2.1 Brief presentation of the characteristics of the research environment

The visits were carried out in sugar and alcohol companies, and different results were obtained, which had already been predicted in the research. The logistics managers in warehouses monitored the visits, welcomed us and explained the logistics processes and how people are managed at work.

The main difficulties in people management and movement within warehouses were identified during the data collection.

2.2 Main characteristics observed in people management

Both companies provide leadership training for managers, focusing on what management and leadership should be like and how this knowledge should reach other employees.

Company 1, located near the municipality of Pitangueiras in the interior of São Paulo, has 41 employees in its warehouse and more effective people management. Each employee clearly has a defined role that is essential to the continuity of the process.

Managers are responsible for disseminating information and determining how the process should occur within the warehouses, thus allowing good communication between the processes, managers and all employees in the sector in question.

Employees arrive at their workplace aware of all the tasks to be performed during the period, with complete safety and quality. This way, managers can speak the appropriate language to their employees without losing focus on their leadership spirit.

Managers form their teams with the leader responsible for the shift they will work on. The leader receives all the information about the process and transmits it clearly and objectively to all employees, resulting in positive results.

Company 2, located near the municipality of Pitangueiras in the interior of São Paulo, has 110 employees in its warehouse, who hold various positions from factory floor to manager; many of these employees are idle and do not know what tasks to perform.

Managers are responsible for disseminating information, and how the process should occur within the warehouses, so there is good communication between the processes, managers and all employees in the sector.

Employees finish their tasks and wait for their leader to return to find out what tasks they need to perform next; this results in a loss of productivity for the company, as employees are left with idle time.

For people management to have positive results, the organization must have its roles, objectives and goals defined according to the company's needs.

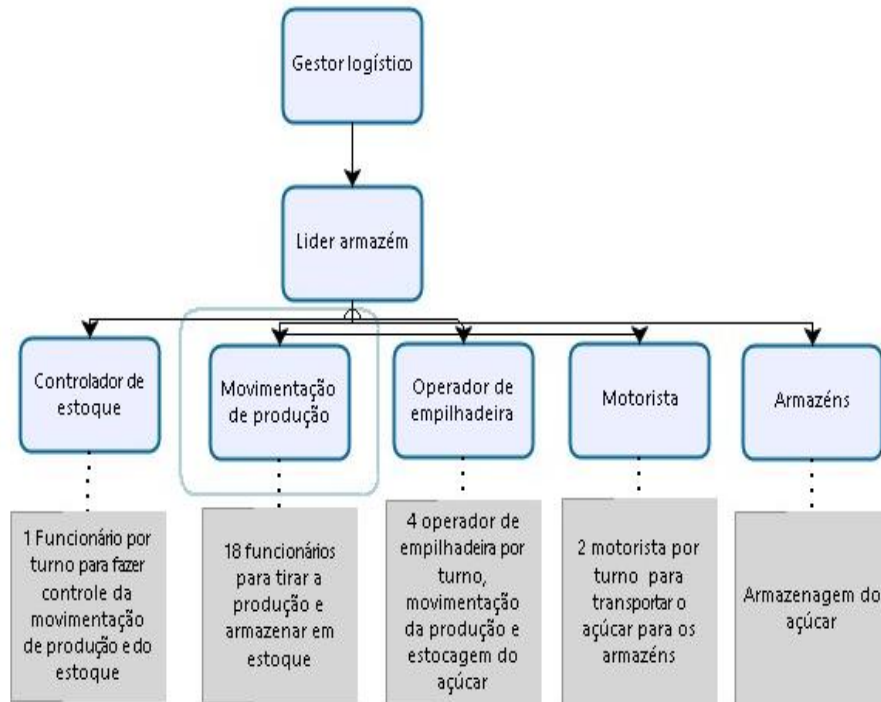
2.3 Survey of Warehouse Management Staff

Company 1 has three warehouses and a storage capacity of more than 45

thousand tons of sugar per warehouse; its production is distributed according to its storage capacity and market demand.

Figure 2 shows the staff of Company 1, where machines, trucks, and conveyors move all production.

Figure 2. Company 1's staff and their roles within the warehouse.



Source: Own authorship (2024)

The company with this staff works with quality, safety and speed in its logistical activities.

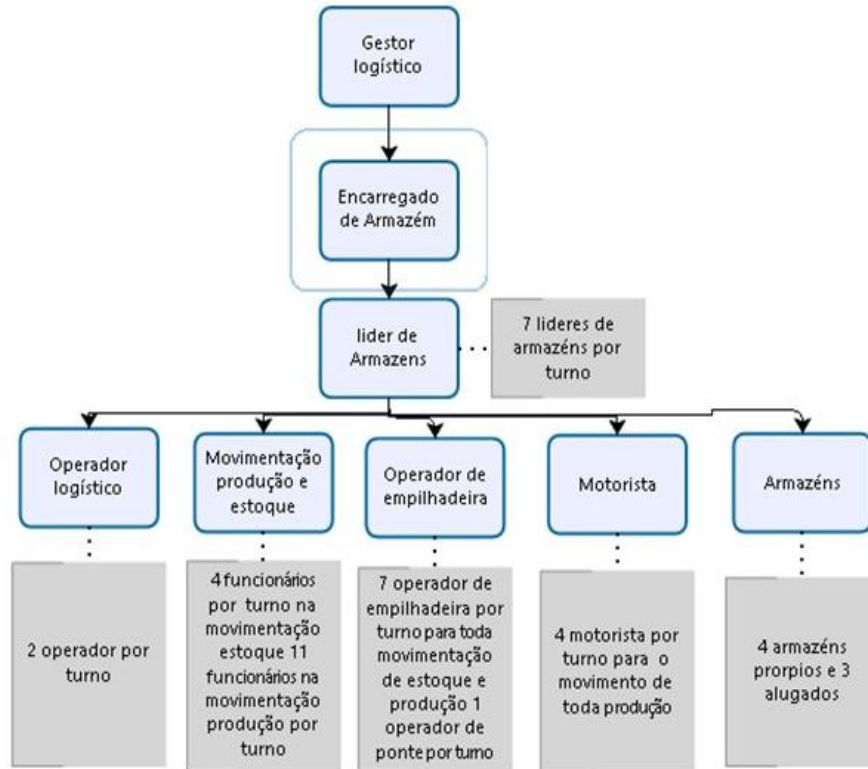
Company 2 has seven warehouses, 4 of which are its own and three outsourced. Each warehouse has a capacity of more than 40,000 tons, so its production can be stored for longer.

Below, Figure 3 shows the more complete staff of company 2. It consists of a manager, a leader for each of the warehouses and a supervisor per shift. The company's internal movements include trucks, forklifts, overhead cranes and conveyors.

In moving production, they rely on several employees per shift, including balancers (packaging the sugar into bags), baggers (moving the packaged sugar in stock or for transport), and controllers (controlling the movement of production and stock).

When production or movement is stopped, employees remain idle and do not travel to other warehouses to help, which leaves the company with idle labor.

Figure 3. Company 2's staff and their roles within the warehouse.



Source: Own authorship (2024)

2.4 Possible failures and suggestions for improvements

According to what was identified about warehouse management and staff, it is possible to show that company 1 is structured and carries out its activities effectively, even when the scenario changes, in the event of a stoppage in the production process.

Company 2 has flaws in its management system because despite having a full staff, even more than that of company 1, there is little understanding of the daily activities to be carried out. This results in a decrease in the efficiency of storing the final product and in financial losses since the company pays employees who, in turn, end up being idle.

In Table 1 below, some flaws were found in the companies studied, as can be seen.

Once the flaws in the systems were highlighted, it was identified that they could be improved through investments, such as:

- ✓ Training leaders and managers in daily work management;
- ✓ Job description, which specifies the functions of each employee;
- ✓ Daily work goals to be achieved;
- ✓ Improved communication within organizations through information bulletin boards and Daily Safety Dialogue (DDS);
- ✓ General meetings with managers, leaders and representatives of each sector on the factory floor;
- ✓ Feedback on goals achieved.

Table 1. Possible failures found within companies.

Faults found	Company 1	Company 2
Internal logistics		X
Logistics in People Management		X
Training for managers		
Training for leaders		
Factory Floor Training		
Communication between leaders and managers	X	X
Communication between leaders and the factory floor		X
Leaders' knowledge of the sectors		
Shop floor knowledge about the sectors		X
Good communication between the factory floor	X	X

Source: Own authorship (2024)

Regarding employee motivation, the following could be implemented: career plans in both companies, assistance with scholarships, employee of the month, awards based on goals achieved, training, and recognition of employees for successes and mistakes, among others.

The companies studied' managers should adopt new management strategies to achieve the goals and results established in each company's strategic planning. For example, we have the *Kanban Panel*, where your tasks are exposed to everyone, avoiding communication failures in people management and internal logistics.

Table 2 presents some suggestions for improvements in relation to people management and warehouse logistics so that the companies studied can improve the communication gap between managers/leaders and employees and obtain positive productivity results.

Table 2. Proposals for improvements in people management and warehouse logistics in sugar and alcohol plants

Analysis of improvements in people management	Possible improvements in the sector
Leaders training	Knowledge
	Performance
	Skills
Motivational plan	Objective and clear meetings
	Propose challenges
	Encourage training
	Know your employees
Communication processes	Receiver
	Messages
	Emission
	Code
	Communication channel
Knowledge and skills	Knowledge of what is going to be done
	"Knowing how to execute" skill
	"Quickness in performing activity" skill
	Attitudes: Do not wait for someone to tell you to take it and do it

Source: Adapted from Dutra (2017).

Table 3 shows the possible improvements to be implemented for both companies. Regarding failures in people management, companies adopt new projects to train their leaders and managers to deal with the different demands of their management.

Table 3. Suggestions for improvements to be implemented in the Training area

Possible improvements	Company 1	Company 2
Training for all leaders and managers on people management and logistics		X
Training for everyone on the factory floor on the importance of the sector and its activities		X
Training for all leaders and managers, the importance of their knowledge in the sectors		X
Creating a <i>Kanban board</i> to publicize your activities and goals	X	X
Educational and motivational lectures for all employees of the organizations	X	X
Creation of scholarships or aid	X	X

Source: Own authorship (2024)

When employees are aware of all operations in the sector, they feel like important contributors to the company. As a result, their operational performance and even their appearance improve, creating a better climate and greater productivity.

3. CONCLUSION

During the research's development, which included two on-site visits, it was noted that both companies studied had flaws in people management. These flaws resulted in major financial losses for the companies and demotivation among their employees.

Regarding warehouse logistics, both companies should optimize the use of their facilities, equipment, machinery and employees to achieve maximum efficiency and reduce unnecessary expenses.

However, the research achieved its objective, which was to verify possible failures in communication and people management since they can interfere with warehouse logistics operations. After recognizing the failures, possible improvements were proposed. However, new studies involving other plants that offer opportunities to interview people involved in management and the factory floor are extremely important for developing the topic in question.

For future work, the companies studied should improve the logistics of their warehouses and facilities. Other studies involving other plants and larger samples are of great importance for the development of the theme in question.

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