

Analysis of the quality management system according to ISO 9001: 2015 in Peruvian companies selling processed potatoes

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Abstract- In recent years at an international level, the term quality has been increasingly involved within organizations. In this research, a review of the level of accomplishment with the ISO 9001: 2015 standard is proposed in Peruvian companies selling potatoes, where various steps were followed to select the theoretical bases focused on quality that contribute to the analysis of the aforementioned system and for the construction of the instrument that provided the expected data. Among the results, it was found that the selected companies for this study present different scenarios in terms of accomplishment with the requirements of the ISO 9001: 2015 standard. After the interpretation of each reflected indicator, it is concluded that this potato processing companies in Peru, if directed to a quality management system, will have a notable increase in sales since they comply customer quality demand.

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I- INTRODUCTION

According to CITE Papa y otros cultivos andinos, despite the fact that Peru is positioned as the first potato producer in Latin America and worldwide it occupies the eleventh position [1] local fast food chain restaurants in Lima opt for imported potatoes [2]. Data reinforced by tax collecting body SUNAT that reports companies such as Alicorp, Bambos, Hiper-mercado Tottus and Makro bought potato from Europe even though the price triplicates local potato turning their back on national harvest. For this reason, according to the Ministry of Agriculture and Irrigation (MINAGRI), more than 700 thousand families of farmers and potato producers in Peru showed their displeasure because potatoes imports have been growing notably over time and local potatoes are not valued, and in this sense, farmers have raised their voice to protest against the government for not protecting their production.

Thus, uncertainty arises: why these companies cannot acquire the national product? The answer is simple: because they have had bad experiences with their local potato suppliers in terms of quality [3]. It gets worse if national harvest is not given in

standard conditions throughout the territory, which is the main reason why it is being displaced: due to the lack of measures focused on quality [4]. In this context, Celfia Obregon –CEO of CITE Papa y otros cultivos andinos- highlights that potato processing companies in the country employ low quality indicators in handling their product. These companies literally give their employees a tub where they peel and cut the potatoes with poor hygiene and handling practices, which could be the main reason that such importing companies do not prefer the domestic product. Another reason, for which Peru is at a great disadvantage compared to the transnational exporters of this product, is supported by Jhonathan Bringas, a recognized manager of the largest Dutch potato exporting company, who mentions the evidence that “in Peru, these processing companies potatoes do not consider quality principles” [5].

That said, it is necessary to identify the international standard that ensures significant benefits such as: ability to continuously provide products and services that meet customer demands, ease of reaching the various opportunities to increase customer satisfaction, address risks and opportunities associated with its context and objectives, finally the competence to demonstrate fulfillment with certain established requirements [6]. The article entitled “Quality Systems as strategy for competitive advantage in the food agroindustry”, reflects the great importance of having a quality system today, because it shows international competitiveness in markets. Thus, this research is very useful since it presents a discussion regarding the implementation of quality systems as a tool for competitive advantage in the food industry. For this, a review and analysis of its application, its relationship with the market and its intervention in the sector. Concluding from the aforementioned, that quality systems are a key tactic to achieve a considerable competitive advantage within the food industry [7].

Furthermore, in their article entitled “Quality and something else: the joint effect of quality and environmental management on the profitability of the company” [8] present one more benefit, they affirm that quality management is positively related to

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business profitability, since the authors detail within their literature review, those arguments related to cost reduction. In other words, it focuses on the search for continuous improvement in reducing waste and, therefore, the number of defects, in addition to reducing the use of raw materials, seeking to unnecessary operations and thus guarantee management avoid focused on improving efficiency within processes.

This research focuses on ISO 9001: 2015, because this certification has an important participation in peruvian companies in the food sector with an increasing number of certifications in the last 7 years [9]. Despite this increase in ISO 9001 quality certifications, the country unfortunately represents 3% in Latin America and 0.13% worldwide [10], concluding that almost all peruvian companies are not prepared to provide products with guaranteed quality.

As we learn more about the reality that peruvian companies experience in relation to ISO 9001: 2015, it is essential to analyze why these organizations are not capable of providing 100% quality and find out possible causes why companies do not prioritize quality concepts. In this sense, the article entitled "Obstacles to ISO 9001 certification in SMEs", identifies some significant reasons that can limit obtaining quality certification such as lack of commitment from senior management and collaborators, lack of resources and finally, a factor that works against is time [11].

And how to avoid these obstacles? Well, in order to reduce or eliminate them, it is extremely useful to do a good job from the beginning of the process, that is, from the investment plan by considering the Quality Management System (QMS) that, through a systematic methodology, applies a series of elements that ensure the safety of the food that will result in the confidence of being consumed. This QMS is manifested in the management, control and documentation of all those stages required to obtain the final product [12].

[13] establishes that it is an overriding factor to initially diagnose the performance of their QMS, since in this way peruvian companies can be motivated to provide the necessary resources to generate quality in its processes and products and, therefore, in the satisfaction of its customers. This is very important, since according to [14], only 1% of formal companies in Peru have QMS implemented.

The present investigation is focused on the application of ISO 9001:2015 in potato distributors in Peru, although it is true that the application of the international standard is not a new issue, the novelty is in determine, analyze and interpret the levels of compliance with the requirements demanded in the regulations under two perspectives: in the company that is dedicated to import potato and distribute it in the country, as well as that one dedicated to process and sell national potato.

In this part, it is necessary to mention that a main limitation arose at the very beginning of this investigation: the only official peruvian companies database in the potatoes industry was

dated 2009 and no updates have been made. Even when the research team desired to make an update as part of the investigation, it was not possible to concrete due to pandemic production restrictions (COVID-19) as a consequence of the lockdown (most of not essential industries where closed by legal restrictions) and, thus, production in 2020 was not representative.

Finally, taking all the above as a reference, the present focuses on generating awareness in all those Peruvian entrepreneurs who work with "flag product", who are clearly limited to bringing foreign product, simply by having the certifications corresponding to quality. But what if, as Peruvian entrepreneurs dedicated to potato processing, they sought these international certifications? This would generate a "boom" within the country, because there are few Peruvian organizations that have compliance and certification of foreign regulations. Likewise, its social impact is aimed at providing the necessary information for Peruvian potato processing companies to know the importance and benefits of implementing an international quality management system.

II- METHODOLOGY

The population was obtained from the database provided by the research of [15], who identified a total of 31 peruvian pre-fried potato companies, being his research the most recent compiled by this database. The commercial activity verification was made in accordance with tax collecting entity SUNAT, leaving only 4 companies in activity. When contacting these companies to invite them to participate in the study, authorization was only received from one company which we will call Company A (the reasons for the others can be attributed to the fact that due to the restrictions of the COVID-19 pandemic they were out of work or in uncertainty). In contrast, a Company B that processes and sells domestic potatoes was chosen, which has decided to adapt to quality standards given the latest requirements of its customers and with the expectation of getting better customers.

TABLE 1
GENERAL DATA OF BOTH STUDY COMPANIES.

	Company A	Company B
Origin of the product	Potato imported from Belgium with ISO Certification	National potato (Perú)
Region where the company is located	Lima	La Libertad
Type of clients	- Canal Food Service: hotels, restaurants, casinos and catering - Retail channel: supermarkets, taps and minimarkets.	Local restaurants
Annual sales volumen (kilos)	600,480	208,800
Years dedicated to the activity (years)	20	10

Source: Information given by companies A and B

Identified these two companies, for the realization of this study, the GAP Analysis was applied dimensioned in: (a) level of accomplishment with the organization's context requirement, (b) level leadership requirement accomplishment, (c) planning requirement accomplishment level, (d) support requirement accomplishment level, (e) operation requirement accomplishment level, (f) evaluation requirement level performance and (g) level of accomplishment with the continuous improvement requirement. To complement these data, an interview was agreed with chief managers of the companies selected as a study sample in order to know the reality of each one of them and identify the main agents involved in the potato processing.

III- RESULTS

For the analysis of the Quality Management System in these Peruvian selling potatoes companies, the results of the evaluated dimensions were:

a) Level of accomplishment with the organization's context requirement; which included aspects as evaluation of the groups of interest / external interested parties, the needs and expectations of the interested parties, the scope of its system and finally the process and elements that intervene within the company.

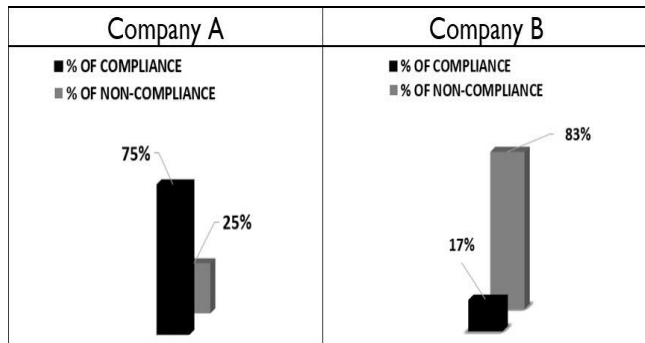


Fig. 1 Comparison of the level of accomplishment with the organization's context requirement. Source: Authors

INTERPRETATION: Company A meets the requirement of the context of the organization, that is, it identifies the interested parties and records it. While the potato selling company B is in a low level of accomplishment with this requirement that is the reason why will proceed to design required regulations formats and identify each of the components that have an impact.

b) Level of accomplishment with the leadership requirement: it was sought to evaluate the following proposed indicators; responsibility regarding quality in production / positive behaviors regarding customer focus and policies in relation to the system that allows the organization's direction related to quality.

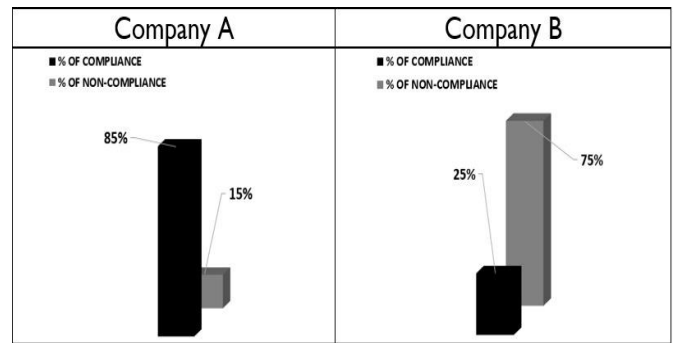


Fig. 2 comparison of the level of accomplishment with the leadership requirement.

Source: Authors

INTERPRETATION: Company A responsibly meets leadership in the organization, it means, the person in charge maintains assertive communication with the collaborators, so they know about the policies and objectives and records it as well. While company B has begun to communicate to each of its collaborators the goal they seek to achieve, but this is not documented or registered as required by the regulations.

c) Level of accomplishment with the planning requirement. The following proposed indicators were evaluated: The significant consequences of risks and opportunities within the company to plan various measures that address these consequences; objectives and their planning in relation to quality; make sure that necessary resources and elements are available to achieve the objective directed to product delivery and; finally, changes necessary for proper and meticulous planning for possible changes that could arise with the sought quality system.

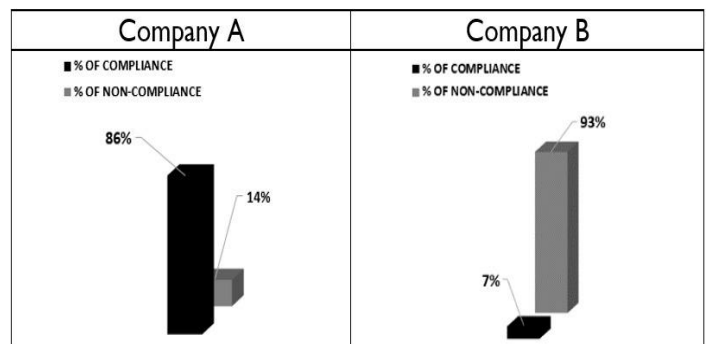


Fig.3 Comparison of the level of accomplishment with the planning requirement.

Source: Authors

INTERPRETATION: Company A meets planning requirement in the organization, since it properly organizes the company and takes into account planning to achieve its objectives and pur-

poses, in order to prevent inconveniences that may affect distribution. While company B is in a low percentage of accomplishment of this requirement, since it was found that it does not adequately plan each change it wants to make, it is more concerned about the present and does not think about what could happen more ahead.

d) Level of accomplishment with the support requirement: the following proposed indicators were evaluated: means necessary to carry out production and guarantee quality throughout the production process; necessary equipment; graphic representation of the organization's structure that allows identifying graphically each of the existing areas; jobs within the production area; profile of collaborators that integrate the organization; finally, assertive communication within production area (between each of the collaborators that belong to the production process as well as among each of external parts.)

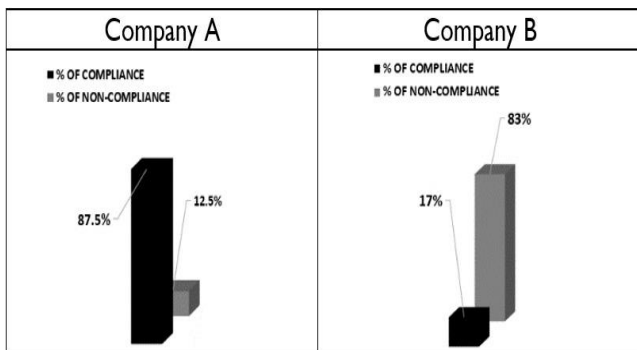


Fig. 4 Comparison of the level of accomplishment with the support requirement. Source: Authors

INTERPRETATION: Company A meets the support requirement, since it demonstrated that it has the necessary resources to carry out the production, it also has a profile for the collaborators, which makes the company very selective when choosing employees for marketing. On the other hand, company B has a low percentage of fulfillment in support requirement since it does not have an adequate record that reflects the profile of the needed employees to integrate into the organization, besides company A does not have all the resources for a good production.

e) Level of accomplishment for operation requirement: the following proposed indicators were evaluated: most critical processes and their respective control measures; requirements / requests sought in the product; existing errors in production and suppliers profile.

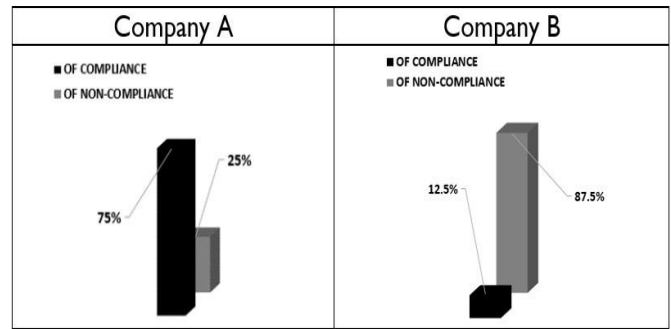


Fig.5 Comparison of the level of accomplishment for operation requirement. Source: Authors

INTERPRETATION: Company A meets the operation requirement, since it has criteria to select its suppliers (requiring certain certifications to provide material); has identified critical processes that would affect its distribution proceedings. While company B has a low level of accomplishment for operation requirement, since all the criteria to select its suppliers are not registered and at the time of delivering a product company B does not has clear what its customer needs to be satisfied.

f) Level of accomplishment with the performance evaluation requirement. The following proposed indicators were evaluated: the performance of the defined system; the internal audit in the organization; and, evaluation of the defined system with which the organization works to guarantee effectiveness

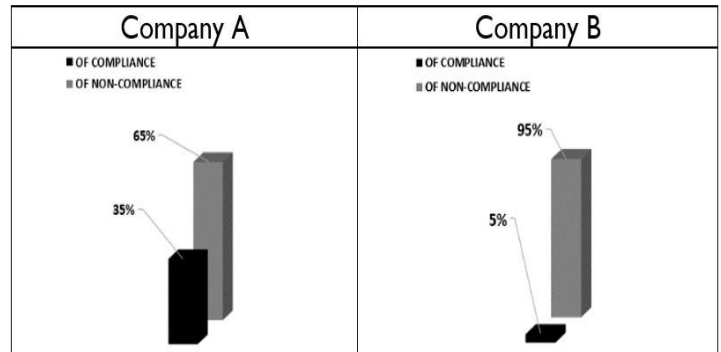


Fig. 6 Comparison of the level of accomplishment with the performance evaluation requirement. Source: Authors

INTERPRETATION: Company A focuses on evaluating its processes to find out if they are adequate, but it is not directed to carry out periodic audits to evaluate its performance. Company B does not apply nor carries out audits and evaluations to know its performance in production and if the quality system applied is the correct one.

g) Level of accomplishment with the requirement of continuous improvement. The following proposed indicators were evaluated: existing failures and non-conformities as well as their possible causes and the control measures (that are chosen to reduce or counteract the consequences and direction to continuous improvement).

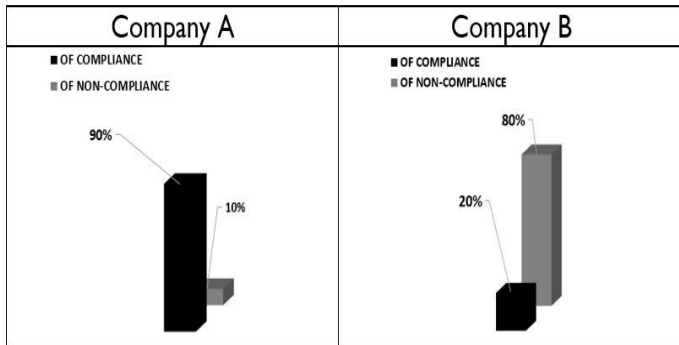


Fig. 7 Comparison of the level of fulfillment of the requirement of continuous improvement. Source: Authors

INTERPRETATION: Company A focuses on making periodic corrections to failures or claims that arise in the course of its processes, at the same time it is directed to continuously improve to provide a better product in relation to quality. While company B is limited to worrying about the present, but do not have a planning for continuous improvement of their processes. Finally, once the level of accomplishment for each requirement demanded by ISO 9001: 2015 has been addressed, it is convenient to present the global level of accomplishment with the quality management system in each of the studied companies. This is how a high level of accomplishment with the QMS by the potato selling company A is evidenced, since it has already started with the application of strategies aimed at quality, which makes it easier when adapting the documentation that requires ISO 9001: 2015, to later keep the system controlled. Meanwhile, the potato selling company B is in a low level of accomplishment with the global QMS, being more necessary to share knowledge and quality-directed activities within the organization, and later apply, document and control them periodically.

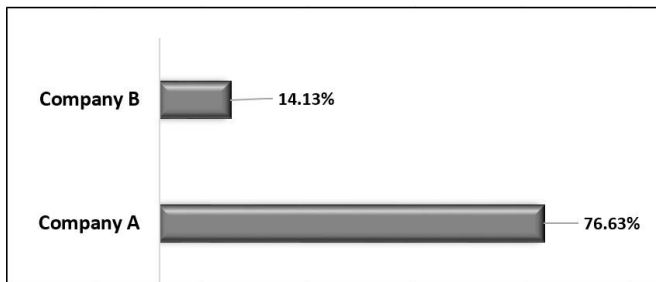


Fig 8. Level of accomplishment with the quality management system of the studied companies Source: Authors

IV- CONCLUSIONS

The results from this research must contribute to studies focused on the evaluation of the ISO 9001: 2015 quality management system in companies.

After applying the proposed instrument for the analysis of the ISO 9001: 2015 quality management system in peruvian potato selling companies, it is concluded that the Company A which imports frozen prefried potato from Belgium a very well improved QMS because it is required by its supplier that has international certifications. In this standardized cooperation, it is guaranteed quality throughout the production chain. Thus, the marketing company meets 76.63% of fulfillment of the requirements that integrate ISO 9001: 2015, therefore it is more accessible to adapt its quality system as required by ISO. Later Company A could obtain the international certification that guarantees quality in its product. The size of its sales is notable, since it meets each of its customer's requirements in relation to quality.

On the other hand, there is the potato selling company B, which maintains low sales due to an internal perspective, that is, it keeps its activities focused on the present and disconnected from the vision of continuous improvement prescribed by the Standardized Quality Management System and not worrying about expanding its customer portfolio, even less it does not aim to insert quality terms within the organization. Thus, it is evidenced a final result that reflect its low level of accomplishment of 14.13% in ISO 9001: 2015.

It has been proved that by being directed to a quality management system more selective customers could be achieved and as a consequence of that will come the increase in customer satisfaction, and, therefore, it will be directly related to the increase in sales.

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