



Production Order Costing System: Coconut Food Producing and Processing Industry

**Sistema de Costo por Orden de Producción: Industria
Productora, procesadora de Alimentos derivados del
Coco**

Oscar Geovanny Coca Benites, CPA

Master's Degree, Mediform Higher Technological Institute
Geovanny.coca@istmediform.edu.ec
<https://orcid.org/0009-0002-9600-6898>

Jorge Manuel Coca Benítez, Eng. Com.

Master's Degree, Mediform Higher Technological Institute
jcoca@istmediform.edu.ec
<https://orcid.org/0009-0008-7627-6915>
University of Guayaquil
Jorge.cocabe@ug.edu.ec
<https://orcid.org/0000-0003-4048-5471>

Dolores del Rocio Ortiz Guevara, CPA

Master's Degree, Universidad Laica Vicente Rocafuerte
dortizg@ulvr.edu.ec
University of Guayaquil
dolores.ortizgue@ug.edu.ec
<https://orcid.org/0000-0002-1212-3089>

Diana Carolina Pineda Arenas, Lic.

PhD, Mediform Higher Institute of Technology
rectormf@istmediform.edu.ec
<https://orcid.org/0001-8616-2294>

ABSTRACT

It is based on the application of a valid cost management system that helps to detect the problems that have been occurring in the past, in order to facilitate the analysis of each item of its elements involved in the management of the processes. To design a costing system that

helps to strengthen the economic and financial liquidity of the companies. Convenience sampling is a non-probabilistic sampling technique where the samples of the population are selected only because they are conveniently available to the researcher. According to some texts analyzed and researched, it was possible to determine that not all scholars and specialists on the subject agree with the same concepts regarding the classification of the types of research, after much research and exploration it was concluded that this type of research will be carried out in a consensual way in a descriptive and explanatory way.

RESUMEN

Se basa en aplicar un sistema de gestión de costo válido que ayude a detectar los problemas que se venían acarreando en el pasado, con el fin de facilitar el análisis de cada rubro de sus elementos que intervienen en la gestión de los procesos. Diseñar un sistema de costeo que ayude a fortalecer la liquidez de las empresas en lo económico y lo financiero. El muestreo por conveniencia es una técnica de muestreo no probabilística donde las muestras de la población se seleccionan solo porque están convenientemente disponibles para el investigador. De acuerdo con algunos textos analizados e investigados, se pudo llegar a determinar que no todos los eruditos y especialistas en torno al tema coinciden con los mismos conceptos con respecto a la clasificación sobre los tipos de investigación, luego de tanto indagar y explorar se llegó a la conclusión de que este tipo de investigación será llevada de manera consensuada en forma descriptiva y explicativa.

Keywords / Palabras clave

Costs, Cost of Production, Profitability

Costos, Costos de Producción, Rentabilidad

Introduction

One of the most frequent problems of any company that manages production processes worldwide, is the lack of knowledge of techniques that exist at the time of establishing the costs, coming to find countless inconsistencies or omissions in their preparation, a cost system should be a tool that helps in a systematic way, not so complex to obtain in a practical way the price of unit costs.

After studying each of the costing systems, we see that there are a variety of methods to select, but not before we must choose the one that best suits the effort with which the processes are carried out and to obtain a real cost of the product, these costing systems found in books, websites, texts, theses, are techniques that generally emphasize the absorption costing system, which, by its degree of complexity, dilated and not so skillful is the most named by many authors. The problem of the companies is not only that they show weaknesses at the moment of making their costs, but also that when solving them they only obtain approximate values according to the practice used, making their final costs differ from the real unit cost, making it impossible in one way or another that the financial statements are not so reliable nor so accurate at the moment of making effective decisions, creating an uncertainty, to know if at the end of the exercise a profit or loss was obtained in the due process.

Most companies involved in the production and processing of food and beverages have found it necessary to resort to traditional costing systems that allow them to quantify in a simple way how much it costs to invest in the manufacture of a product. Along this path, we will propose a costing system that will help us to obtain in a safe and practical way the cost of manufacturing a good or service, projecting the expected results at the end of each exercise and proving its degree of efficiency in the process.

Based on the analysis of this problem, the system that is best suited for this type of process is the absorption costing system or also called absorbing costing, this system will allow to fully integrate the inclusion of all its components, both fixed and variable, in the cost summary.

The company that is the object of this study, in its failed way to determine its costs, included only basic elements such as raw material and one or another material, completely forgetting the labor item, under the premise that all its elements are necessary, it was decided to develop this exercise that in turn helps to control and safeguard the company's most valuable inventories. Having said this, other shortcomings were found in the process, which are mentioned below:

- There were no concrete reports on how much was actually consumed in each production.
- There was no adequate costing system to provide real and timely data for decision making, for which they relied on a standard budget for all productions.
- There were no concrete reports of damaged supplies and inputs, raw material and waste in each process.

The company under study is an entity dedicated to the production, processing, and marketing of food and beverages for mass consumption, with five years in the market, became known for its innovative products in terms of flavor mix, which were very well accepted in large supermarkets coinciding with the same ideology of its customers to hear the slogan that the more unusual products are the more welcome they would have in the market, for its innovation, content and presentation, were attracting the attention of a large part of the consumer group.

To all this, we must emphasize that the guidelines and structures that will be developed in each of the variables of each of the components of the process will at some point be evaluated to determine their percentage variations and see if there were increases or decreases from one period to another.

65

Evidently one of the most recurrent problems of this process was the lack of logistics at the time of purchasing raw material to place the orders for each production order, without taking into account the necessary corrective measures to obtain the desired optimum batch, knowing that not all the raw material (coconut) had the same yield of water or pulp in each unit.

After analyzing in depth the reality of the company, at the moment of costing its products, in an ephemeral way, we will narrate its process. First of all, the purchase was made for the same amount of coconuts based on an already established budget, regardless of the fact that 495 liters of coconut water were needed in each production batch, installed capacity of a kettle, which yielded 1,830 units of 300 cc product, usually a coconut does not yield the same portion of water as another, since all coconuts are not the same size.

The average feed of each coconut is approximately 0.750 liters, close to the liter, seeing that its purchase budget was defined to acquire 450 coconuts per production, it was assumed that it would be able to obtain enough liters for its manufacture, which was not the case, there was a gap in the amount of raw material, which was replaced by water, an essential element in the production, as a result of this process it was concluded that its degree of durability was too short for its consumption.

Upon learning of this inconvenience, the managers opted to obtain a second option if they did not wish to buy coconuts in their natural state, which was to purchase the raw material (coconut) in a natural way.

processed, i.e. dehydrated, which in the end was much more efficient for processing, so much so that there was a significant reduction in labor costs that greatly favored the interests of the company.

At present the habit of costing the products made that the contribution margins were perceived very high in each production line, case of coconut juice overestimating and overvaluing it completely, the use of the absorption costing system for this type of process will be the best adhered to for its determination, which clarifies in a coordinated way the adequate profitability margins, demonstrating the importance of applying a good and accurate costing system.

This research project is aimed at providing technical and reliable information, referring to determine what are the real costs that are carried out to produce a product, where its practice is easy to understand and valuation for managers and financiers of companies that help the correct decision making when setting prices, discounts, promotions and to obtain the maximum benefit from each of their products.

Cost accounting should be considered as a key element of management in all planning, control and strategy formulation activities, since it provides the indispensable accounting tools to achieve the proper functioning of some phases of the administrative process, such as planning, control and evaluation of operations (Arredondo, 2016, p. 2). In the planning phase, cost accounting makes future projections through budgets (...) (Arredondo, 2016, p. 2). When we talk about control, cost accounting refers to the present time, since it compares the actual results obtained with what is budgeted in the planning phase (...) (Arredondo, 2016, p. 2).

Finally, the evaluation phase involves a critical analysis of the results that were actually obtained and analyzes the problems (...) and the deviations that were obtained with respect to the expected results, so that the causes that originate them can be eliminated or isolated. (...) (Arredondo, 2016, p. 2).

To report on the existing costs in the company to correctly measure the profit and correctly value the inventory, which has a direct impact on the income statement (within the cost of sales) and on the balance sheet (inventories). Provide information to management that is the foundation in the planning, control and decision-making process (Arredondo, 2016, p. 4).

Cost Accounting is a branch of Management Accounting that plays a prominent role in financial reporting, since product or service costs are an important component in determining the income and financial position of any

organization. In general, Cost Accounting is related to the estimation of Costs, allocation methods and determination of the Cost of goods and services (Muñoz, Toalombo, Zúñiga, Guerrero, & Campos, 2017, p. 19). According to (Padilla, n.d.) "The purpose of cost accounting is to know the return on labor and capital invested in the manufacture of a product, as well as the value of the merchandise we have in inventory".

By knowing the information on costs, it is possible to carry out budget analyses that allow investors to make decisions regarding the long-term expansion of the company, such as the acquisition of new modern machinery, projects involving new products or the establishment of prices for sales (Padilla, n.d.).

Serve as a source of cost information for economic studies and special decisions, including long-term capital investments, such as replacement of machinery, expansion of the production plant, manufacture of new products, pricing for sales, etc.

(Luján, 2009) states that raw material "constitutes the first starting point of any industrial activity, which are subject to transformation, processing, dismantling, crushing and extraction by mechanical or manual means, to then convert them into finished product" (p. 55), raw material is the first element of the cost since it has a direct relationship with the final product. The raw material in this object of study (coconut) belongs to the variable costs, i.e. the more units of juice produced, the more raw material is used, without affecting the unit price of each product.

In other words, we can mention that raw materials and inputs involved in every production process should never be in short supply in every production process. Here are some examples of raw materials and their process.

It is the remuneration (salary, social benefits and employer's contributions) to which workers directly involved in the manufacture of products are entitled, for the time actually worked either manually or by operating machines responsible for the transformation of raw materials and other materials into finished products (Arias, Portilla, and Fernández, 2010).

For Enriquez (2016) Indirect manufacturing costs are "Those disburseable costs incurred by any factory for the production of a product, excluding raw materials and direct labor. The (CIF) not being part of the final computation, they do not cease to be necessary and benefit the production as a whole".

Materials and Methods

According to some texts analyzed and researched, it was possible to determine that not all scholars and specialists on the subject, agree with the same concepts regarding the classification of the types of research, after so much research and exploration, it was concluded that this type of research will be carried out in a consensual way in a descriptive and explanatory way.

Given the background mentioned in the previous paragraphs, the probable sample to be determined is through a non-probabilistic convenience sample that will benefit the company Coco Way. Because of its commercial name, to learn more about its processes. Convenience sampling is a non-probability sampling technique where samples from the population are selected only because they are conveniently available to the researcher. These samples are selected because they are easy to recruit and because the researcher did not consider selecting a sample that represents the entire population (QuestionPro, 2021).

In non-probability sampling, not all members of the population have the opportunity to participate in the study, unlike probability sampling, where each member of the population has a known chance of being selected. (QuestionPro,2021).

The interview is a technique, or sequential procedure of questions where through a dialogue between two or more people, the central theme to be treated is built and cemented, the interview can be conducted visually face to face, exchanging full information of the facts that occur in a specific case, the interview techniques can be both quantitative and qualitative.

Results

According to the diagnosis made for this research work, we can affirm that after an absolute evaluation of the internal controls and procedures, encouraging results could be obtained, concrete due to the implementation of the absorption costing system, a method that revealed the reality of each of the differences found in the process, This method revealed the reality of each of the differences found in the process, mainly in the execution of the objectives outlined in each production line, where logic was put before improvisation, and then

the idea of quantifying the reality of their participation, according to the elements that were not taken into account at the beginning of this process.

Consequently and objectively we will establish a comparative analysis where it will be demonstrated that what was previously used was not the appropriate way to identify the unit costs of the products, after having added the cost elements that were missing both labor and indirect manufacturing costs, it was observed that the changes should never have been excluded, according to the technique created where all cost elements attribute in one way or another to contribute to the results of production operations.

This is how a peculiar way was designed, very different from the traditional, to determine the costs, which should have a different control than usual, which consisted of knowing precisely each of the variables that allow to obtain in a fair way the cost of the product, where the result would be a higher cost, without this meaning that the product becomes more expensive but rather would help to take measures of reflection for the good decision making that the administration considers to take to improve the profitability of the products.

After concluding with the systematization of costs, it is necessary to mention the many favorable and unfavorable aspects that led to the analysis of this proven technique, where they did not have an adequate control of the cost processes from the beginning to the end, where we will mention the most relevant points to consider.

- They do not keep any type of report related to costs.
- There is no guide or manual indicating the steps to be followed for the proper preparation of the product.
- There are no controls of the classifications that identify the cost items to which each direct or indirect item belongs in order to determine their reasonableness.
- Among the unfavorable aspects we can also mention that the company was constantly registering losses due to a lack of knowledge in cost control and manufacturing.
- However, there is one favorable aspect, which is that they made sure that the production came out in optimal conditions.

It is undeniable and logical at the same time to think that by incorporating the other two elements that were isolated in the previous productions specific case as labor and indirect manufacturing costs, and that at the time of including them in this new process would automatically suffer an increase in production costs, demonstrating that it is essential to prepare in this way, so that managers get a better view of the reality of cost allocations in each production order.

As we pointed out in the cost comparison chart, it would not be so difficult not to notice that there would be significant differences in unit production costs when adding the other elements that were isolated in previous productions, if we look at each of the products we notice that there is a big difference in their unit costs, this is because the elements of labor and indirect costs were added, As we can appreciate the costs at the beginning were not referents for a good decision making which were submerged in an undervaluation where the term refers that a product is sold below its intrinsic value, so we can say that the differences explained leads us to that this new costing system favors the interests and decision making by managers.

It is recommended to value this technical report which was developed to be executed in this recommended absorption system, where at first glance this stands out for revealing the step by step guidelines and procedures to be performed at the time of determining the costs required in each production order, report that serves a valuable function as a research tool and constant support for the efficient improvement of control management.

To always carry out the action plan for which it was created, where it was demonstrated that its functionality adheres to this type of processes, with the purpose that the program is consolidated with the installation of a software, where only the necessary information is inserted and a final product that minimizes the risk is obtained, versus what was proposed in an Excel sheet, since the way to obtain the final product is thorough in every way, with the program already finished the process will be saved.

The project presented is viable, but like any company, an elaborate marketing plan and commercial strategies that contribute to the knowledge and positioning of the product in the market must be used. The first step is to create a network of suppliers for a better commercialization of the juices, encouraging them to become part of it.

Conclusions

The article concludes that the product chain can be expanded with other pulverized fruit juices or foods that have healthy components such as soy milk, honey, among other foods.

If possible, try to implement certifications and licenses to the product so that it has greater recognition in the Ecuadorian market and expand the distribution line throughout the national territory, seeking in less than 10 years to expand the business abroad.

It is recommended that variable costs be minimized in order to obtain a higher profit margin per product. It is important to invest in machinery for automation of the production area and for research and development of new products.

References

- (n.d.). Aguilar, S., & Avila, S. (2019). Production cost of shrimp and its incidence on the selling price. Guayaquil.
- Alvarado, P., & Calle, M. (2011). Design of a Production Order Costing System for the Artisan Workshop "ARTEMA" Undergraduate Thesis University of Cuenca. Cuenca, Ecuador.
- Alvarado, P., & Calle, M. (2011). Design of a Costing System by Production Orders for the Artisan Workshop "ARTEMA" Undergraduate Thesis University of Cuenca. Retrieved from Diseño de un Sistema de Costos por Órdenes de Producción para el taller Artesanal "ARTEMA" tesis de Pregrado Universidad de Cuenca.
- Arias, Portilla, and Fernandez. (2010).
- Arredondo, M. (2016). Contabilidad y análisis de costos. San Juan Tliluaca: Grupo Editorial Patria.
- Bernal, C. (2010). Research Methodology. Bogotá: Pearson.
- Bustos, J. (n.d.). BMDE Accounting. Retrieved from Fines de la Contabilidad de costos: <https://sites.google.com/site/contabilidadbmde/fines-de-la-contabilidad-de-costos>
- Caballero, B. (July 2014). Autonomous University of the State of Hidalgo. Retrieved from Costos por órdenes de Producción: https://www.uaeh.edu.mx/docencia/P_Presentaciones/zimapan/contaduria/20142/analisis_de_costos.pdf
- Cagua, R., & Cortez, L. (2016 - 2018). Cost Control - What are Costs in Accounting? Quito.
- Chamorro, D. (2016). Contabilidad Administrativa un enfoque gerencial de Costos. Santiago de Cali.

- CP Polo (2013). Cost Accounting in Senior Management. Bogotá: Nueva Legislación Ltda.
- Duque, M., Osorio, j., & Agudelo, D. (2010). Inventories in manufacturing companies, their treatment and valuation. A look from cost accounting. Medellín.
- Enriquez, R. (May 24, 2012). Taem Perú Consulting. Retrieved from Costos Reales y Costos Predeterminados: <https://taemperuconsulting.com/costos-reales-y-costos-predeterminados/>.
- Enriquez, R. (May 12, 2012). Taem Perú Consulting. Retrieved from Costos Reales y Predeterminados: <https://taemperuconsulting.com/costos-reales-y-costos-predeterminados/>
- Enriquez, R. (January 19, 2016). Taem Perú Consulting. Retrieved from Los Costos Indirectos de Fabricación: <https://taemperuconsulting.com/los-costos-indirectos-de-fabricacion/>García. (2008).