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PRICING PROCESS FOR CERAMIC PRODUCTS IN THE CENTRAL REGION OF RONDÔNIA WESTERN AMAZON / BRAZIL

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ABSTRACT

Setting prices and pricing strategically make a big difference, as one situation is to react to market conditions and another is to manage them proactively. Determining pricing is a tactical decision, while strategic pricing is the coordination of interrelated marketing, competitive, and financial decisions maximizing the process. A field research was carried out with 20 (twenty) ceramics, with the objective of understanding the policies, strategies, tactics and costs in the pricing of products from the central region of Rondônia – Western Amazon/Brazil. The methodology adopted was a descriptive and exploratory research, using non-participant observation, with a quantitative and qualitative approach, where semi-structured interviews and questionnaires were used as data collection instruments. It was identified that the strategies and tactics in ceramics are aimed at granting discounts and reducing the price; they do not have a product positioning policy; price based on competition; have difficulties in controlling costs; they disregard depreciation. Another problem to be considered is that 95% of ceramics have outsourced accounting, which is justified by the low price of the service provided, which evidences the reduced use of internal management accounting. For 80% of the ceramics that participate in the meetings, there is a disparity between the contribution that these meetings bring to the pricing process, there is no uniformity in the prices charged, there is competition for market share and according to the description of the potters themselves, 75% classify themselves as market followers. There is little use of the break-even point for decision-making on product pricing.

Keywords: Pricing. Pricing Strategy. Costs for Pricing in Ceramics. Cost Measurement. Market Share and Mark-Up.

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INTRODUCTION

The pricing process plays an important role in the success of ceramics installed in the central region of Western Amazonia/Brazil, because knowing how to position the product in the increasingly competitive market where it is managed in an environment where it seeks to produce with maximum efficiency and with increasingly modern industrial plants becomes a challenge. The search for having a competitive product where competition is fierce in which quality, efficiency, productivity and flexibility play vital roles in the survival of any company.

In this new scenario where these ceramics are inserted, it is necessary to have new forms of operation, cost management, product positioning in the market with an emphasis on customer satisfaction, are fundamental factors that ensure the development of companies. As exposed, the decision on the price of a product is one of the most delicate and important operational issues in a company, after all, it is through the price that the resources that will cover all the expenses involved in the manufacture of the products are generated.

Pricing, or the formation of sales price in a scenario such as the current one, must consider a significant number of variables and alternatives, not limited to its minimum floor, which can be understood as the unit cost, as it must take into account numerous other factors. From the observation to the exploration of the pricing processes employed in ceramic companies and in order to present the strategic, tactical and operational factors of the pricing processes, the following question was raised: in the pricing process, are the policies, strategies, tactics and costs used in the process of price formation of ceramic products in companies in the central region of Rondônia – Western Amazonia/Brazil?

To this end, the General Objective was to analyze the policies, strategies, tactics and costs in the pricing of ceramic products, in order to assist the decision making of managers on the pricing process, cost management and the positioning of products in the market, as specific objectives: To raise the theoretical basis and recent studies on the costing and pricing process of ceramic products; Describe the process of measuring costs and its effects on the pricing process of ceramic products; Analyze the strategies, tactics and policies in the pricing process; Identify the variables that influence pricing in the ceramic sector in the internal and external scope of companies.

Due to the importance of the pricing process, a field research was carried out with 20 ceramics from the central region of Rondônia, with a descriptive and exploratory research character, using non-participant observation, with a quantitative and qualitative approach, where semi-structured interviews and a questionnaire were used as an instrument for data

collection with the objective of identifying the policies. practices and strategies that companies in the ceramics sector in this region use to compose the prices of their products.

For all that has been exposed, it was decided to develop a text in which the pricing process is described in the most practical way possible and in a reverse way, that is, from the outside to the inside of the company, covering at the same time, holistically, all the aspects with which it is interrelated, because in general the pricing theme is treated in isolation, when in fact it relates to the areas of marketing, finance and accounting. Therefore, the theoretical foundation addressed the pricing process, the concept of prices and its objectives, internal and external factors relevant to the pricing process, pricing processes, pricing based on value perception, competition, strategic planning, cost management, *market share analysis* and international state of the art.

In the cut made for this study in July 2021, ceramics produced 10,451,500 pieces, of which 8,588,000 were bricks, 1,220,000 pieces of tiles and the rest were Covers (Ridge and Paulistinha), Slab, Channel and other products. The ceramics distribute these products to 31 (thirty-one) municipalities, 06 (six) of which belong to the States of Mato Grosso-MT; Acre-AC and Amazonas-AM, these states consumed a total of 1,044,900 pieces, the other 9,406,600 pieces are consumed in Rondônia-RO.

THEORETICAL FOUNDATION

Price has an aspect of importance around economic agents, and has been acting throughout history as one of the main factors of consumer choice, changing its degree of importance according to the intrinsic characteristics of the product, the market and the macroeconomic environment in which it is located. Thus, many decisions to purchase products/goods/services are made based on their prices, as many consumers have unlimited desires, but limited resources, so the purchase only exists if the price justifies the satisfaction obtained by the purchase (Berto, 2012).

Sun (2024) pricing is defined as a strategic process of identifying the compensation value that corresponds to the value provided by sellers and perceived by customers in exchanges. Domingues et al. (2017) state that "the price is the amount of money that the consumer disburses to purchase a product and that the company receives in exchange for its transfer". Thus, Deonir et al. (2017) argue that companies that do not manage their prices lose control over them, harming their profitability and cost-benefit ratio mainly due to the willingness of customers to pay a certain price, which does not depend only on the perceived value, but also on the prices set by the main competitors.

Bernardi (2017, p.103) describes "price as a decisive factor in the choice of a product for the purchase decision, nowadays, such importance has been accentuated mainly by the increase in supply, the degree of demand, the increase in the consumer's bargaining power and, mainly, by the availability of information." "What is happening worldwide and gradually in Brazil is growing competition, increased imports, a trend towards free prices, a growing demand for quality and modernity increase the bargaining power of the market."

For Matos (2023), Bruni and Famá (2019), establishing a price is one of the most important financial steps of the entity and although it is not the only one responsible for the good performance of the business, its poor preparation can be responsible for damaging the continuity of the company, in addition to generating idleness and waste. Thus, there are three processes that can be used in setting prices: cost-based, consumer-based, or competition-based. The first considers the costs incurred to then add profit margin, being a simpler, fairer and safer alternative. The process that follows the consumer market takes into account the perception of the market, influenced by many variables, social and economic contexts. Finally, Pissinati, (2022), describes competition as a determining factor for prices charged, as their prices are constituted as a result of what is practiced in the market.

Carvalho (2024) highlights that it is important to remember that the definition of the sales price is not a static process, but a dynamic one that must be constantly evaluated and adjusted. As Kotler and Keller (2019, p. 413) point out, "the price of a product should be periodically reviewed to reflect changes in the marketing environment and economic conditions". Therefore, it is essential for companies to be aware of market changes and adjust their prices in order to remain competitive and profitable.

For this, managers need accurate and quality information to aid decision-making, so that their actions direct the results to obtain the expected performance. In this sense, the formation of the price is essential for the survival and growth of companies, regardless of size or area of operation (Mota 2023 and Bortoluzzi et al. 2020)

If the price is given, why then bother with the policy and price formation? It is well known that profit comes from prices and sales volumes; Therefore, much more than in any other situation, it is vitally important that the company knows its customer very well, what expectations it has, what it values in its value scale, its costs and expenses thoroughly, that it carefully examines its policy and pricing and harmoniously manages all the variables involved in question, in order to know exactly its limits of action, Even if there are implicit and invisible costs throughout the company, generated by the environmental and organizational context, if not measured, erode profitability and with regard to the market,

possible volumes and returns, thus establishing its operating strategy (Dias 2023 and Bernardi 2017).

Adaptation to this new paradigm requires knowledge and consideration of several variables involved in this process and which constitutes the so-called "market compound". Strictly speaking, the variables that make up this compound can be grouped into two sets; the environmental variables, which make up the social, political and economic environment, the market itself, the structure of the existing competition, the distribution structure, the government, the technological degree by the cost structure; the variables managed by the company, which aims to optimize its adjustment to the market, the product, the price, the promotion, the location and the sales team (Berto, 2012).

Contributing to the new trends, there are four approaches to price formation, such as: cost-based pricing, a traditional methodology where it seeks to recover all the efforts made in the productive and administrative process and return on investments. Pricing based on value perception, Souza (2021) and De Toni et. al. (2017) indicate that when this approach is used, it allows companies to achieve better return margins, because in this method, regardless of production costs, companies seek to measure how much customers are willing to pay for the product. Pricing based on strategic planning, where pricing will be based on the objectives set by the company, such as *Market share* (market share/share, in free translation, is the percentage of sales for which a company is responsible within its niche). Market share can be a resource that provides a company with the opportunity for greater market power over "*upstream*" suppliers and "*downstream*" channels and customers and thus control prices in various ways (Bhattacharya 2022).

Finally , the formation of prices based on strategic positioning, often related to the positioning of the price of the product in relation to the competition (Coelho 2017, p.22). Prices based on competition, which according to Sun (2024) and Octoviany (2023) is also called competitive prices, is determined using competitors' prices as a parameter. Thus, the company can set the price of the product a little below its competitors, equal to its competitors, or a little above its competitors.

The lack of one of the models that brings together one of the four approaches makes any form of pricing flawed. The use of one of the four approaches is indispensable for the construction of a pricing policy and strategy. "The essence of formulating a competitive strategy is to relate a company to its environment", and to know how to work so that the variables that are related to pricing interact with each other, creating the synergy necessary for the success of the enterprise. It is also possible to work in line with a product that is

considered unique by customers, that is, whose characteristics distinguish it from those offered by the competition (Dezordi 2022, Porter, 1989).

For the development of this research, traditional costing, marginal costing and the most common techniques regarding costing control were used, as the vast majority of small and medium-sized companies lack a basic system of cost accounting and even price formation, which represents the minimum necessary for a good pricing process. According to Maia (2024), Bruni and Famá (2019) and Padoveze (2004), the aspects of product pricing used are: Fixed costs (unit cost of products), variable costs (price given by the market + competition + consumer) and the pricing of the raw material used (price given by the market).

Based on a market of perfect competition or monopolistic competition to which companies in the ceramic sector in the central region of Rondônia – Western Amazon/Brazil are inserted, an analysis of marginal costing is very important for the sales formation process. Based on Bruni (2011, p.275), marginal cost could be conceptualized as the cost increment corresponding to the production of an additional unit of product.

Another important factor to be observed is the *trade-off* [2]between companies that are price makers and those that are price takers following the economic approach, as their position in the market leads them to define their costing and pricing process. Recent studies on pricing in the international and national context, as described below, were searched to serve as a basis for the present study.

Gerlach, Heiko and Nguyen, Lan. (2021) states that "the price leadership of the dominant company occurs when a large producer sets its price and a smaller competitor or a competitive fringe follows as price takers". This study shows that when two capacity-constrained firms compete on price, the larger firm emerges as the equilibrium leader. The reason is that the small business can lose more by being reduced and setting a lower price than the leader. On the other hand, the large company can provide a price umbrella that allows the small company to reduce and sell its entire capacity. Finally, price leadership in collusion occurs when the process of price change aims to coordinate prices at the level of collusion.

Kotler (2019) summarized pricing policy as: first, the firm selects its pricing objective (survival, maximization of current profit, maximization of market share, and leadership in product quality); second, it estimates the demand curve, the probable quantities that will be

[2] *Trade-off* - the area of Economics, a term widely used to describe some situations is "*trade-off*" - which means nothing more than choosing one thing over another.

sold at each possible price; third, it estimates how its costs vary at different levels of experience and accumulated output and for competitors' offerings; fourth, the company examines the costs, prices, and offers of competitors; fifth, it selects a pricing method.

For Bernardi (2017, p. 49), the second path that can be followed is the price policy as a function of demand. In this process there is "price discrimination", where the product, merchandise and specific services are sold at different prices, based on: customer, time, place and time. The third path that can be followed is the policy of pricing according to competition. In this, the company determines its prices according to the market in which it operates.

INTERNATIONAL STATE OF THE ART

In the research conducted by Gousgounis and Neubert (2020) on pricing strategies and practices for medical devices used by consumers, it mainly presents as a result that market-based pricing strategies and competition-informed pricing practices are more widely used and, to a lesser extent, value-informed pricing practices. Emphasizing the little use of the perception of value in the formation of the sales price.

In the study of price dispersion and inflation costs carried out by Hahn (2021) pointed out that the new *Keynesian* literature usually assumes that firms always need to satisfy demand, which is at odds with the profit-maximizing behavior under Calvo pricing when long-term inflation is positive. Our model, which relaxes this assumption, predicts that inflation causes a substantially smaller loss in effective aggregate productivity compared to a reference model without the possibility of rationing. In addition, under positive inflation, firms choose smaller *mark-ups* on marginal costs in the model than in the reference model. As a result, the analysis suggests that the new *standard Keynesian* model may exaggerate the welfare costs of inflation.

According to Rounaghi, M.M; Jarrar, H.; and Dana, LP. (2021) in the study Implementation of Strategic Cost Management in Manufacturing Companies: indicated that the use of the strategic cost management approach can create competitive advantage for companies, this can result in increased profitability and competitiveness of manufacturing companies in a highly competitive global market and at a market-based price. In addition, due to the increasing competition among enterprises in providing high-quality products at reasonable prices, an accurate product cost measurement system is necessary, so in a competitive world, paying attention to cost management to reduce it and increase customer satisfaction are priorities.

Ziari, M.*et al*. (2022) in the study A Review on Competitive Pricing in Supply Chain Management Problems, it was concluded that most of the current work has focused on finding the balance of Bertrand, Nash, or Stackelberg, while some other gaming approaches, such as dynamic programming, hybrid approaches, utility functions, may result in better solutions. Another important issue is to consider cooperative models to improve supply chain profitability. To make the system more agile, proposing a robust and competitive pricing model can also be challenging and bring large increases in market share or company profit.

Liozu, S.M; *et al* (2021) in the study on the Configurational Theory and Practices of Companies Employing Multiple Pricing Policies, unanimously pointed out that value-based pricing has a positive effect, that competition-based pricing has a negative effect, and that, finally, cost-based pricing has a neutral effect on the company's performance. The present research suggests that a finer analysis of the antecedent conditions is necessary and, indeed, possible, driving the performance of the firm via prices is therefore essentially not only about prices, but also about the configuration of a series of factors mainly controllable on prices.

Farm, A. (2019) in the article Pricing in practice in consumer markets, offers a theory of pricing in consumer markets that relates a market where all firms have (approximately) the same cost prices plus (or value-based prices), not only the individual prices, but also the market price (price level) will depend on the same factors. In such a case, the market price will be determined by the cost plus price (or value-based price) of the dominant undertaking, which, however, may be modified if the dominant undertaking estimates that the decrease in the market price will increase not only its market share (due to its excess capacity and the limited capacity of its competitors), but also their profits.

Heiko Gerlach, Lan Nguyen (2021) in the study on reeling prices in cartels, related the long-standing discussion about price leadership in industries. Dominant firm price leadership occurs when a large producer sets its price and a smaller competitor or a competitive fringe follows as price takers. Deneckere and Kovenock (1992) show that when two capacity-constrained firms compete on price, the larger firm emerges as an equilibrium leader. The reason is that the small business can lose more by being reduced and setting a lower price as the leader. On the other hand, the large company can provide a price umbrella that allows the small company to reduce and sell its entire capacity. Competitive and barometric pricing leadership refers to situations where changes in prices reflect market conditions and asymmetrically informed companies. Finally, price leadership in collusion occurs when the process of price change aims to coordinate prices at the level of collusion.

METHODOLOGY

The methodological design is characterized by a field research, where the inductive and statistical methods were used, with descriptive and exploratory research characteristics, with a qualitative and quantitative approach, due to the approach on the process of formation of the sale price in ceramic companies in the central region of Rondônia – Western Amazonia/Brazil. The free software *Jamovi* (Versison 1.6), *R: A language and environment for computing was used.* (Version 4.0) to compile the statistical data. In the elaboration of the questionnaire, two models were used, the first based on the research carried out by Miqueletto (2008), the second on the studies of Souza (2006). Some questions were adapted to the ceramic sector and some questions were created that contributed to the achievement of the specific objectives of the study.

Its application was carried out by the researcher in visits to the 20 (twenty) ceramics, always with those responsible for the pricing process of the organizations. The pre-test was carried out in ceramics D, located in the municipality of Pimenta Bueno, after the necessary adjustments, the questionnaire was applied to all other ceramics. All data were collected in August 2021, and portrayed the production and commercialization of the month of July 2021.

The interview script addressed: the characterization of the company, the profile of the interviewee, the autonomy of the person responsible for the formation of the sales price, the company's pricing policy, the costing process, methods of formation of the sales price, criteria and timing of reviews, determining factor, strategies, the company's accounting and security in the pricing process. The non-participant observation occurred during the process of interviews carried out in the ceramics, where the production process was observed, starting with the stock and treatment of the clay, extrusion process, drying, fuel for burning the products, the firing process, the types of kilns, the classification of finished products and the administrative processes focused on the control of the costs of the ceramics.

The managers of price formation in the headquarters of the ceramics located in the central region of Rondônia – Western Amazon/Brazil, can be presented as the subject of the research, indicating the municipalities and quantity of ceramics installed: Cabixi - 01; Colorado do Oeste- 02; Vilhena - 01; Pimenta Bueno - 06; Cacoal- 05; Rolim de Moura - 03; Espigão D´Oeste -01 and Ji-Paraná - 03, all belonging to the State of Rondônia, making a total of 22 ceramics.

In this study, all 22 (twenty-two) ceramics installed in the region were visited by the proponent, but only 20 (twenty) accepted to participate in the research, which represents 90.91% of the selected intentional sample. The sample calculation presents a margin of

error of 6% for the sample of this study, admitting a significance of 5%. The research is characterized by an intentional sampling . To present the ceramics participating in this study, Chart 02 was constructed, with a description of the location, year of foundation, type of kiln, number of employees, products produced, quantity produced and *Market Share* market share of ceramics.

Chart 02 - Profile of the companies surveyed

And	Location	Year Established	Forno Type	Number of Employees	Products Produced	Quant. Prod. month	*Market share %*
The	Cabixi-EN	2008	Mobile and Paulista	10	Brick	160.500	1,54
B	Colorado-RO	1986	Mobile and Paulista	19	Brick, Slab, E. Vazado, Solidor and Canaleta.	422.000	4,04
C	Colorado-RO	2016	Movable	19	Brick	250.000	2,29
D	Vilhena	1983	Tunnel	50	Tijolo, Laje and Tijolo Estrutural	900.000	8,61
And	Pimenta Bueno-RO	2017	Tunnel	38	Brick	1.000.000	9,57
F	Pimenta Bueno-RO	1979	Vault	45	Brick, Tiles, Slab, Covers, E. Opening, Floors, Channel	393.000	3,76
G	Pimenta Bueno-RO	2015	Brazil	22	Gutter, laje, structural tijolo	109.000	1,04
H	Pimenta Bueno-RO	2019	Paulista Vault	26	Brick	455.000	4,35
I	Pimenta Bueno-RO	1995	Paulista Vault	12	Brick, Slab, E. Hollow	300.000	2,87
J	Cacoal-RO	1988	Vault	72	Tijolo, telhas, laje, capes	800.000	7,65
K	Cacoal-RO	1983	Tunnel and Vault	120	Brick, tiles, covers	1.091.000	10,44
L	Cacoal-RO	2020	Hoffman	23	Brick	250.000	2,39
M	Rolim de Moura RO	1996	Vault	8	Brick	150.000	1,44
N	Rolim de Moura-RO	1991	Movable	57	Brick, Slab	810.000	7,75
Or	Rolim de Moura-RO	2019	Vault	32	Brick	600.000	5,74

P	Ji-Paraná-RO	1986	Little Owl	16	Brick	580.000	5,55
Q	Ji-Paraná-RO	1979	Mobile and Paulista	48	Brick, Slab, E. Opening, Floor and Gutter	645.000	6,17
R	Espigão D'Oeste-RO	2016	Vault	11	Brick	300.000	2,87
S	Ji-Paraná	2004	Brazil	26	Tijolo, laje and Canaleta	216.000	2,07
T	Pimenta Bueno-RO	1998	Vault	60	Brick and Tiles	1.020.000	9,76
20	08 Cities	-	06 Types of Fornos	714 Employees	10 Types of products	10.451.500	100 %

Source: 2021 survey data.

The distance traveled between the first and last ceramics surveyed is 902 Km, but during the research a longer distance was covered, as some cities were visited more than once, due to the problem of the availability of managers' schedules to participate in the data collection process.

ANALYSIS AND DISCUSSION OF THE RESULTS

The data collected through the field research through the instruments: *on-site* visit, interview, questionnaire and non-participant observation, were treated and analyzed, and will be discussed and presented in this chapter. In this research, the survey of information about ceramics in their pricing process was sought in the central region of the state of Rondônia - Western Amazon/Brazil where the 22 (twenty-two) ceramics are installed, presenting the quality of the clay and demand for the products.

The results found were organized according to the order established by the questionnaire elaborated, where it is presented; o Profile of the interviewees; o Profile of the ceramics; and thespecific objectives: to describe the process of measuring costs and its effects on the pricing process; to analyze the strategies, tactics and policies in the pricing process; to identify the variables that influence the process of elaboration of the sales price in the internal and external scope of ceramics. In this context, the data were treated using statistics, analyzed and discussed in the light of the existing theory, in an objective and systematic way, meeting the predetermined general and specific objectives.

Starting the analysis of the results, in relation to the profile of the participants, 90% were male and 10% female. Women held the positions of administrative managers of the companies surveyed. Describing the ages of the participants, it is observed that 45% are

between 34 and 41 years old, 25% are over 50 years old, 15% are between 26 and 33 years old, 10% are between 18 and 25 years old and 5% are between 42 and 49 years old. Adding all age groups, 75% are over 34 years old.

Regarding the education of the participants, 5% have a postgraduate degree, 60% have completed higher education, 10% have incomplete higher education, 20% complete elementary school and 5% incomplete elementary school. The most indicated higher education course is Administration with 30% of the answers, the Accounting course presented itself with 15% of the answers, with 5% the courses of Architecture, Law, Economics, Letters, Mathematics and Veterinary Medicine. In summary, 75% of the sample has a higher education degree and 25% has a high school education.

Examining the time people have been in the companies and due to this time, experience in the sector, it is observed that 45% have been in the company for more than 15 years, 25% have been in the sector for 6 to 8 years, another 25% have been in the company for 3 to 5 years and only 5% have been in the sector for less than 2 years. It is verified that 70% have been with the company for more than 6 years, which demonstrates experience and *market know-how*[3] in the ceramic sector.

In identifying the profile of ceramics, 70% of the sample describes itself as a Small Business that, according to the Federal Revenue of Brazil – RFB (2021), (have annual gross revenues between R$360 thousand and R$4.8 million), 30% as being a Medium Company according to the Federal Revenue of Brazil - RFB, (have maximum revenues equal to or less than R$6 million). This issue is important due to the classification given by the Federal Revenue of Brazil in the tax collection system, the Simples Nacional.

Regarding the mix of products manufactured by ceramics, 100% of the ceramics in the surveyed region can produce Bricks, only 20% produce Tiles, 45% produce Slabs, 15% produce Covers (Ridge, Paulistinha), 20% produce Hollow Elements, 20% produce Floors and Solid Bricks, 40% produce the Channel, 10% produce Structural Bricks, 10% produce 21 Holes and Half Moon Bricks, This last item is used to make columns in cylindrical shape.

Describing the profile of the ceramic companies, it was observed that the most used type of oven in the research region is the Vault kiln with an indication of 45% of the respondents, followed by the Paulista or Paulistinha kiln with an indication of 40%, the Mobile kiln is present in 30%, the Tunnel kiln is in 20% and finally the Hoffmann and

[3] Know-how - is a term in English that literally means "to know how". Know-how is the set of practical knowledge (secret formulas, information, technologies, techniques, procedures, etc.) acquired by a company or a professional, which brings to itself competitive advantages.

Corujinha kilns with the indication of 5% in ceramics. The main fuels used in the burning of the products are Firewood and Saw Dust, both with 30% of the answers, tied with 20% those that use Chips and the combination of Firewood and Saw Dust.

In the mix of products manufactured by ceramics, the Brick stands out with a production of 8,588,000 pieces 82.17% of the production and the Tiles with a production of 1,220,000 pieces, these two products together represent 93.84% of the total production of pieces, making a total of 10,451,500 pieces. It can be seen that 6.16% of the production is destined to other products, in this universe, Tiles, Slabs, Covers (Ridge and Paulistinha), Hollow Elements, Floors and Channels, together represent 17.83% (1,863,500 pieces) of the total produced.

The six largest companies in the sector in terms of production of parts are presented as follows, in first place ceramics K with 10.44% market share, in second place ceramics T with 9.76%, in third place ceramics E with 9.57%, in fourth place ceramics D with 8.61%, in fifth place ceramics N with 7.75% and in sixth place, ceramics J, with 7.65% of the total production. The other fourteen ceramics in the sample have a production variation of 6.2% to 0.61%. As shown in Table 02.

The 20 (twenty) ceramics distributes their products to 31 (thirty-one) municipalities and three states (Acre - AC, Mato Grosso - MT and Amazonas - AM), some close, others a little more distant, due to the concentration of companies, there is fierce competition, and a need to place the product as close as possible to the plant where the industry is installed due to the cost of freight reducing the desired profit margins.

It was sought to describe how the 20 ceramics participating in this study serve the Municipality, the State of Rondônia and other States of Brazil, the 04 Ceramics D, P, Q and S represent 20% of the companies that serve only the municipalities where they have their plants installed, the 09 Ceramics A, C, L, G, M, N, O, R and T represent 45% of the companies that serve the Municipality and the State of Rondônia and the 07 Ceramics B, E, F, H, I, J and K represent 35% of the companies that serve the Municipality, the State of Rondônia and other States of Brazil (AC, MT and AM) that border the State.

In this research, the municipalities and the supply of products and their respective market shares are presented, from the perspective of the supply of ceramic products. In a summarized way and for a better understanding of the markets in the municipalities, Table 06 (Six) Eastern Rondônia Mesoregion 008 to 003, and the municipalities neighboring the State of Rondônia will be summarized with the sum of the amount of products distributed in the 31 (Thirty-one) municipalities. It was sought to describe the proper Consumer and Producer Markets where the ceramics are installed.

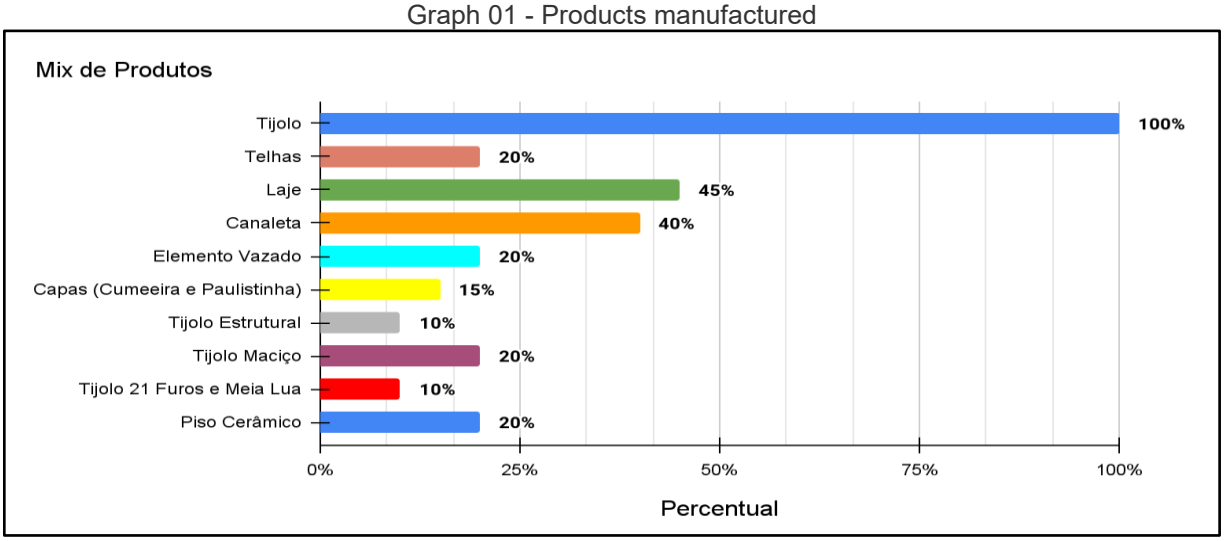
Table 01 - Summary of markets in the Eastern Rondônia Mesoregion 008 to 003

Regions	Consumer Market	Producer Market
Outside the State of Rondônia (AC, MT, AM)	1,044,900 pieces	-
Eastern Rondoniense Mesoregion -008	903,000 pieces	832,500 pieces
Eastern Rondoniense Mesoregion -007	3,134,500 pieces	4,177,000 pieces
Eastern Rondoniense Mesoregion -006	2,880,200 pieces	4,001,000 pieces
Eastern Rondoniense Mesoregion -005	520,000 pieces	-
Eastern Rondoniense Mesoregion -004	1,772,900 pieces	1,441,000 pieces
Eastern Rondoniense Mesoregion -003	196,000 pieces	-
7 regions	10,451,500 pieces	10,451,500 pieces

Source: 2021 Survey Data.

Market share is very important because 80% of ceramics have the need to distribute their products in other regions, only 20% are able to sell their products in the place where they have the industrial plant. For Bhattacharya (2022) marketing literature generally sees market share as an indicator of the success of a company's efforts to compete in a product market, from this perspective, market share is a result of a company's marketing efforts, including its advertising and promotion, quality and price of the product/service offering, channel and customer relationships and sales activities. Regarding the mix of products manufactured by ceramics, as can be seen in Graph 01.

Graph 01 - Products manufactured



Source: 2021 survey data.

As can be seen in Graph 01, 100% of the ceramics in the researched region can produce Bricks, only 20% produce Tiles, 45% produce Slabs, 15% produce Layers (Ridge, Paulistinha), 20% produce Hollow Elements, 20% produce Floors and Solid Bricks, 40% produce the Channel, 10% produce Structural Bricks, 10% produce 21 Holes and Half Moon Bricks.

We sought to mark the data in percentage terms to understand the importance of each one in the distribution of products. In the sample there was no pottery that indicated

that part of its production was destined for public institutions. Ceramics have three specific price lists, separated by types of customers or distribution channels, being: 32% distributed to Final Consumers, 52% are distributed to Retailers/Wholesalers and 16% go to Builders. Analyzing the average price of brick practiced for final consumers of R$800.00, a discount of 15.50% in the price for Retailers/Wholesalers and a discount of 13.50% in the price for Builders was perceived.

In the 04 (four) ceramics E, T, J and K, which manufacture Tiles, it was observed that the distribution presents a profile where 25% of the production is destined to the Final Consumers, 67.5% is distributed to the Retailers/Wholesalers and 7.5% of the production is distributed to the Builders. Therefore, as the ceramics that sell Tiles work with the same Price List for Retailers/Wholesalers and Builders, added to the percentages, the volume of 75% of the production of the Tile is sold for R$1,510.00 and the remaining 25% of the production is sold at the average price of R$1,773.00 to the final consumers. It should be noted that the discount on the price charged to Retailers/Wholesalers and Construction Companies is 14.83%. The average prices practiced by ceramics in the product mix are shown in Table 02.

Table 02 - Average prices practiced by ceramics in the mix of ceramic products in the profile division of Final Consumers, Retailers/Wholesalers and Construction Companies

Goods	Price Final Consumer R$	Retail/Wholesale Price R$	Construction Price R$	Weighted Average Price Practiced R$
Brick	0,80	0,68	0,69	0,72
Tile	1,81	1,52	1,52	1,59
Slab	1,43	1,27	1,27	1,32
Brick. Structural	1,57	1,57	1.57	1,57
Brick. Massive	0,70	0,70	0,70	0,70
Ceramic Flooring	2,02	2,02	2,02	2,02
Channel	2,89	2,80	2,80	2,83
E. Hollow	2,36	2,31	2,31	2,33
Tij. 21 Holes and Half Moon	2,50	2,50	2,50	2,50
C. (Paulistinha and Cumeeira)	2,68	2,68	2,68	2,68
10 Products	Price/Piece	Price/Piece	Price/Piece	Price/Piece

Source: 2021 survey data.

As noted, the weighted average prices are: Brick R$0.72; Roof tile R$1.59; Slab R$1.32; Structural Brick R$1.57; Solid Brick R$0.70; Ceramic flooring R$2.02; Channel R$2.83; Hollow element R$2.33; Brick 21 Holes and Half Moon R$2.50 and the Paulistinhas and Ridge Capes R$2.68 per piece. The weighted average price per piece was calculated using the quantities produced and the average prices practiced, therefore, regardless of the product produced, the weighted average price is R$0.89 per piece.

It is noteworthy that all the cost values of the products were informed by the participants of the research. In the calculation to demonstrate the values that represent the unit costs, statistics were used in order to report the values that represented the central measurement trend, so at some times the median was used and at others the mean, to summarize the values of the central tendency measure, Table 03 was elaborated.

Table 03 - Average cost values for the ceramic product mix

Goods	Unit Cost R$ /(Piece)
Brick	0,50
Tile	0,83
Slab	0,67
Tij. Structural	0,82
Tij. Massive	0,50
Ceramic Flooring	0,37
Channel	0,52
E. Hollow	0,63
Tij. 21 Holes and Half Moon	0,50
Covers (Paulistinha and Cumeeira)	0,87
10	Unit Cost R$/(Piece)

Source: 2021 survey data.

In order to facilitate comparisons of data related to cost, a weighted average was used, since every comparison in this study will be made per piece produced, so the weighted average cost is R$0.55/piece. After surveying the sales prices and costs by products, it becomes possible to analyze the contribution margin of the products. We sought to describe using in the first place the cost indicated by the ceramists and the prices practiced using the weighted average of the distribution of the products carried out by the ceramics through the profile of the customers or distribution channels: Final Consumer, Retailer/Wholesaler and Construction Companies and the quantity produced. The values are described in Table 04.

Table 04 - Contribution Margin by Product

Goods	Unit Cost R$ /(Piece)	Weighted Average Price Practiced R$	Unit Contribution Margin R$	Unit Percentage	Quantities Produced	Total Contribution Margin R$	Total Percentage
Brick	0,50	0,72	0,22	44,00%	8.588.000	1.889.360,00	52,01%
Tile	0,83	1,59	0,76	91,57%	1.220.000	927.200,00	25,53%
Slab	0,67	1,32	0,65	97,01%	195.000	126.750,00	3,49%
Tij. Structural	0,82	1,57	0,75	91,46%	77.000	57.750,00	1,59%
Tij. Massive	0,50	0,70	0,20	40,00%	51.000	10.200,00	0,28%
Ceramic Flooring	0,37	2,02	1,65	445,95%	15.000	24.750,00	0,68%
Channel	0,52	2,83	2,31	444,23%	76.000	175.560,00	4,83%
E. Hollow	0,63	2,33	1,70	253,97%	36.500	62.050,00	1,71%
Tij. 21 Holes and Half Moon	0,50	2,50	2,00	400,00%	50.000	100.000,00	2,75%
C. (Paulistinha and Cumeeira)	0,87	2,68	1,81	208,05%	143.000	258.830,00	7,13%
10	-	-	-	-	10.451.500	3.632.450,00	100%

Source: 2021 survey data.

It is observed that the Brick has a unit contribution margin of 44%, with 8,588,000 pieces sold. The gross amount of the contribution is R$1,889,360.00 in 52.01% of the total. The Tiles have a unit contribution margin of 91.57%, ranking in second place in importance the products sold with the value of R$927,200.00 in a percentage of 25.53% of the total. Added to the tile, there are Capas Cumeeira and Paulistinha with a unit contribution of 208.05% and with a value of R$258,830.00. Added to the products: Brick, Tile and Caps Cumeeira and Paulistinha represent 84.67% of the total contribution margin of the products.

Analyzing the products with less representativeness in terms of volume sold, but which have a high contribution margin, we have the Ceramic Floor with 445.95%, Duct with 444.23%, Brick 21 Holes and Half Moon with 400%, Hollow Element 253.97%, but whose production and commercialization are still low. The quantities of pieces produced are: 15,000; 76.000; 50.000; 36,500 respectively. Adding these four products, they total 177,500 pieces, which represent 1.69% of the total production of products. Presenting great importance in the mix of ceramic products.

Checking the contribution margins of products with intermediate margin, we have Slab with 97.57%, Structural Brick with 91.46%, Solid Brick with 40%, whose production and commercialization present the quantities produced of 195,000; 77.000; 51,000, respectively. Together, these three products present a quantity of 323,000 pieces, which represent 3.09% of the total production of products, evidencing relevant importance in the product mix of the ceramics that produce them.

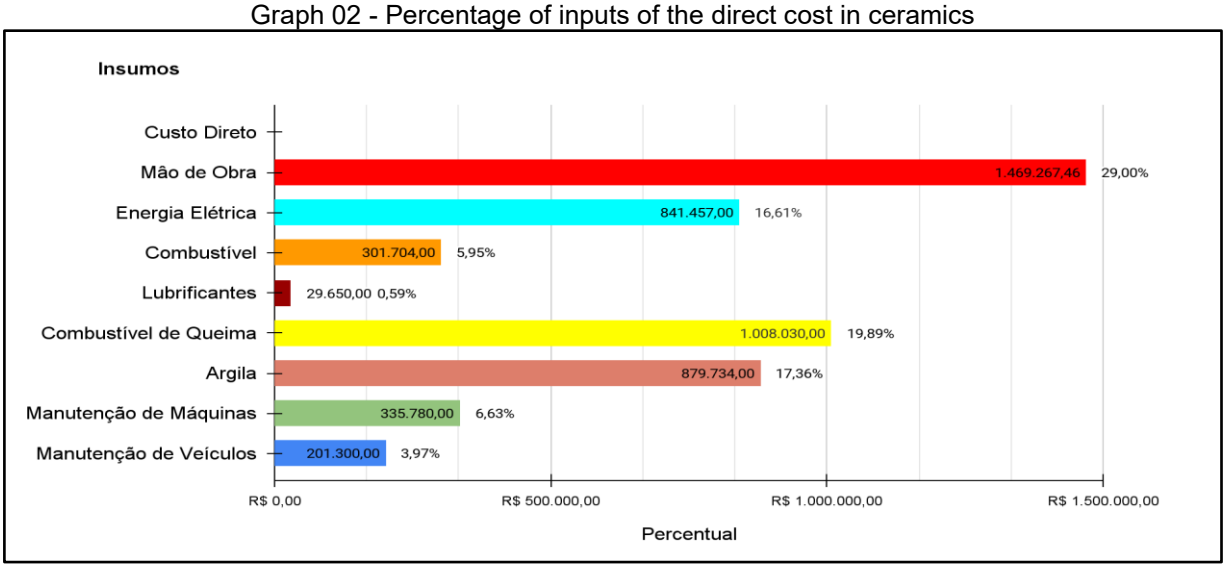
In percentage terms, the products, Ceramic Floor, Channel, 21-hole Brick and Half Moon, Hollow Element, Slab, Structural Brick and Solid Brick represent a high contribution margin, with 15.33% of the total contribution margin of the products produced with a value of R$556,854.58 and in this sample and only 4.78% of the total volume in pieces produced, demonstrating the importance of product diversification for ceramics.

But it is worth mentioning that the demand for these products is low, as can be seen by the quantity produced and the need to have quality in Clay for the production of these products. It should be noted that the Paulistinhas and Cumeeira Covers are only produced by ceramics that produce tiles, as they have a greater investment in equipment, but all other products can be manufactured by all ceramics, but with two important caveats to be considered, the first related to the quality of the Clay and the second to the market demand for the products.

To meet the objective of "describing the process of measuring costs and its effects on the pricing process of ceramic products", they were asked to indicate on a percentage scale the reliability in the calculation of costs, as answers the degree of reliability in costs was in 69% of the answers.

It is possible to observe a certain distrust in the efficiency of ceramics through the analysis of the data found so far, as 25% have difficulties in raising costs. The calculation of costs is done manually and through the notes of the ceramists in 65% of the companies surveyed and added to this fact, another 15% calculate the cost empirically and by approximations, that is, only 20% have the control, 15% through software and 5% through a specialized company. Only 55% control costs on a monthly basis and the other 45% do so using longer terms, in a period in which Brazilian inflation is being quoted, through the IPCA accumulated in the last 12 months at 9.68% until August 2021, according to data from IBGE/IPCA (2021), which shows that prices lag. The appropriation of direct costs can be described in Graph 02.

Graph 02 - Percentage of inputs of the direct cost in ceramics



Source: 2021 survey data.

Observing Graph 02 with the appropriation of direct and indirect costs to the products, we sought to describe the weight of inputs in the direct costs in ceramics. It is observed that the highest direct cost described is labor with 29%, followed by fuel for burning with 19.89%, clay consumes 17.36% of the resources destined for production, the next input is electricity with 16.61% of the costs, the maintenance of machinery and equipment uses 6.63% of the resources, fuel for vehicles consumes 5.95%, Vehicle maintenance uses 3.97% of resources and finally comes lubricants with consumption of 0.59%.

In detailing the composition of the costs of the products, it was sought to evaluate how the indirect costs are apportioned to the products, it was noticed that 55% use the weight of the clay used in each product as an apportionment criterion and 45% apportionment using the quantity produced as a criterion.

Seeking to determine the internal controls of the ceramics and the cost controls, it was found that 95% of the ceramics have external accounting, in this case the accounting only intended for tax issues and the tax authorities, that is, only related to the collection of government taxes, without management accounting. Only Cerâmica K has managerial accounting focused on the managerial purposes of accounting and external accounting focused on tax issues.

As the main justification for accounting being external, 50% of the respondents stated that the cost of the service provided by the accounting firm is very attractive, 25% pointed out the service provided by accounting offices, 20% pointed out that having the professional updated at a reduced cost was the problem of having external accounting and 5% indicated having internal accounting for management purposes and external accounting

for tax issues. The amount of R$1,200.00 is the one that most represents the measure of central trend as the amount paid to accounting firms.

In this part of the analysis of the results, we sought to meet the third objective of this work, which is aimed at "analyzing the strategies, tactics and policies in the pricing process of ceramic products". In the pricing process, the ceramics company needs to define the strategy for the product, selecting its target market and its positioning, its prices must be directed to this path.

Answering what is the main method for calculating the formation of the sales price of ceramic products, it can be seen that 55% form the sales price based on competitors, 30% indicated that they form their sales prices based on the costs of the product, 10% indicated using the contribution margin and only 5% described that their pricing process is based on the value perceived by the consumer market.

In the price formation based on the competition cited by 55% of the participants, Berto (2012, p.69) explains that "the price follower strategy refers to organizations that are not so strong in their sector and will only follow the established price". Price by competition is more common in markets of homogeneous products, fitting perfectly with ceramic products, where the so-called "imitative price" occurs. The monitoring of the competitor's price reduction is predominantly aimed at not losing market share.

For ceramics that elaborate their prices based on the cost of the product, which in this sample represents 30%, Berto (2012, p.66) points out that, normally, "the cost establishes the price floor; the market and the perceived value, its ceiling; and the competition ends up indicating the most appropriate value". The author also indicates four factors that increase price competition, such as: high fixed costs; excess installed capacity; slow growth and lack of differentiation, as factors to be observed, factors that are noticeable in the ceramic sector.

The contribution margin was cited by 10% of the ceramics as a criterion for price formation, according to Sardinha (2013, p.248) where he "defines the contribution margin of a product, merchandise or service as the difference between the value of sales, variable costs and variable sales expenses". The analysis by this method focuses on the evaluation of the ability of each product, sold to contribute individually to the coverage of fixed costs and fixed expenses, through the contribution margin.

Only 5% of the ceramics indicated the formation of the sale price based on the perception of value. Bruni (2008, p. 258) highlights two paths for the formation of the sales price, the formation of the price in a "front to back" process or based on costs; or the

determination of maximum costs in a "backwards" path, based on the value perceived by the market.

It is observed that no company cited strategic planning as a basis for pricing ceramic products. Another fact to be observed is that among the 4 (four) bases cited by those responsible for the pricing process, the periodicity with which the costs are reviewed draws attention since, in Table 07 it is possible to verify that among those who use competitors as a basis to form the sales prices (55%), 06 (six) ceramics or 30% of them control costs on a monthly basis and 05 (five) ceramics or 25% they are made bimonthly for longer terms.

For ceramics that use costs as a basis for the formation of the sales price, only 02 (two) or 10% control the costs monthly, four or 20% spend more than six months to review their costs. The ceramics that indicated the basis of their price formation in the contribution margin and in the value perceived by the consumer market were those that control costs on a monthly basis, according to data in Table 05.

Table 05 - Method used in the formation of the price and frequency of the cost review

Method used in price formation	Frequency of cost review	Frequency	Percentage
Competitors	Bimonthly	3	15,00%
	Monthly	6	30,00%
	Semiannual	1	5,00%
	Quarterly	1	5,00%
Product Cost	Annual	3	15,00%
	Monthly	2	10,00%
	Semiannual	1	5,00%
Contribution margin	Monthly	2	10,00%
Value perceived by the consumer market	Monthly	1	5,00%
Grand total		20	100,00%

Source: 2021 survey data.

Analyzing Table 05, it can be seen that there is a gap in the sales prices for ceramics that is based on the formation of prices, competitors and the cost of products, for these data 45% present as a periodicity of cost review a longer time than two months to review their costs. Therefore, on these bases, the time in which costs are not readjusted leads ceramics to reduce the profit margin of those that control costs on a monthly basis, in this case represented by 55% of the sample.

Seeking to describe the difficulties in determining the selling price, the greatest difficulty encountered by the ceramists, representing 35% of citation, was the oscillation of demand, which makes it difficult to plan production, 20% claimed that the productive

efficiency and its oscillation in production is one of the problems to price the products. Tied with 15% are the selling price below the real, which reduces the profits of the companies and the selling price above the real, which hinders sales, 10% indicated having difficulties in identifying, fixing actions to reduce costs and expenses and only 5% said they had no problem in calculating and adding costs to the products.

The participants were asked when their prices were compared to those of competitors, which were higher, lower or equal to the prices charged by the competition. For 50% they practice prices equal to those of competitors, 35% said they practice prices equal to those of competitors and only 15% said they practice lower prices than competitors.

As described, Octoviany (2023) states that the definition of the product price can be a little below your competitors, the same as your competitors, or a little above your competitors. competitor. Mattos (2021) describes that prices based on competition take market prices as a reference, usually between specific competitors. In this way, a company can compare its profit level against different prices and make them more attractive than those of the competition, managing its resources to reduce costs, meet demand, and increase productivity.

Following this theory, the potters were sought to find what most influences the pricing process, classifying them in degree of importance on a scale in which the most important would be the first, the intermediate the second and the item with the least importance the third**.** It can be seen that the Competition appears in 50% of the answers in 1st place, Costs/Profit/Results in 40% of the answers in 1st place and the Customer only 15% of the answers, which demonstrates the tendency to analyze the Competitors first, then the Costs/Profit/Results and finally the Customer at the time of pricing the products.

Table 6 shows the greatest difficulties when pricing products. The question was open and the respective answers were condensed, as they presented very similar texts.

Table 06 - Difficulties faced when pricing ceramic products

Percentage	Difficulties encountered when pricing ceramic products
60%	Lack of qualified professionals to assist in the costing process within the company.
5%	The amount of the disbursement is high in relation to the value that this information will bring to the company.
5%	Many costs are indirect, which makes allocation difficult;
10%	Fluctuation in input prices.
15%	I have no problem raising the costs of the products.
5%	Lack of adequate software that helps in costing processes.
100%	06 Difficulties encountered at the time of pricing.

Source: 2021 survey data.

Table 06 shows that 60% of the ceramists answered that the lack of qualified professionals who help in the costing process within the company is one of the main

difficulties faced by ceramics, 15% stated that they had no problems when pricing the products, tied with 5% who indicated that the value of the disbursement was high in relation to the value that this information will bring to the company; fluctuation in input prices; oscillation in relation to the volume of production; lack of adequate software that helps in costing processes and many costs are indirect, which makes allocation difficult.

In a way, it is verified that 95% indicated that they use accounting external to their companies, in this case accounting only for tax issues and the tax authorities, that is, only related to the collection of government taxes, without management accounting. A change in thinking is needed regarding accounting being used differently not only for the tax authorities but in order to assist in decisions, especially in cost management.

Another important factor that must be taken into account is the analysis of the Break-Even Point, which, according to Bernardi (2017, p.248), is related to "the calculated volume in which the total revenues of a company are equal to the total costs and expenses: therefore, the profit is equal to zero". Evaluating the use of the break-even point in price formation, it is observed that 85% of ceramics do not use the break-even point and only 15% use the accounting break-even point where it indicates the point necessary for sales to cover all their expenses and indicates zero profit. The break-even point should be widely used, especially by ceramics companies that need to place their products in other markets, indicating a maximum and minimum point in relation to the necessary volume of products or sales to cover the fixed costs and fixed expenses of ceramics.

They were asked about the criteria for differentiating the prices charged to customers in an approach in which they indicated whether the price charged was the same for all customers, whether there was differentiation by customer and quantity or only by customer or by quantity, where 60% of the interviewees indicated that they practice the same price for all customers, 25% indicated that they practice differentiated prices by customer and quantities, 10% indicated that they practice prices differentiating only by quantities and only 5% differentiate prices by customers.

In this way, the presence of a pricing policy that ceramics practice is timidly perceived, but always with price reduction approaches. He observed that 50% practice competitive prices, 40% have elaborated prices consistent with quality, and tied with 5% are those who practice high prices in relation to quality and those who adopt prices by product line. It is evident that those that practice prices consistent with quality evaluate that their products sin in relation to the quality practiced by other ceramics companies that compete in the market, so they practice their prices a little below that practiced by the leading companies in the market. Only one company stated that it practices a high price due to the

perceived quality of its products, so the others price below the leader in quality where they compete in the market.

In a descriptive analysis based on Porter's (2004) theory of the three generic strategies, in which companies can have leadership in cost, differentiation or focus on niche markets, it was asked which of the generic strategies ceramics fit. Analyzing the results, it is observed that 80% of the ceramics indicated the leadership in cost as the main focus and only 20% indicated the leadership in differentiation.

Cost leadership presents in some companies such as having the best burning process through mobile or tunnel furnaces and having the best fuel for the process of burning the product through saw dust or chips. Some have the lead in cost due to the extraction of the deposit being very close to the ceramic production plant, which brings savings in the cost of clay.

Porter (2004) describes cost leadership as an aggressive pursuit of cost reduction through experience, tight control of cost and overhead, not allowing marginal customer accounts, and minimizing cost in areas such as R&D, service, sales force, advertising, etc. Low cost relative to competitors becomes the central theme of the entire strategy. although quality, care and other areas cannot be ignored.

There are ceramics that have leadership in the cost of fuel for burning because they are closer to suppliers and there are those that have access to the best clay deposits, which provides better quality to the product. All these arguments justify 80% of companies indicating cost leadership. This answer is closely linked to the perception of ceramics that only produce bricks, as this product is used in civil construction only as a structure, little used with the product on display (in evidence), where the qualities of the product could be observed. The ceramics that indicated leadership in differentiation are those that have a broader product line, such as 21-hole brick, half-moon, hollow elements and flooring products, which is far from the basic brick product.

We sought to identify the strategies of the ceramics when pricing the products, the most indicated item with 45% was to have a lower cost than its competitors, 30% indicated entering a target market as the main strategy and 25% indicated focusing their prices on a group of buyers. The search for the lowest cost is also justified due to the similarity of the main product produced, as brick represents 82.17% of total production and having a low cost in production is a strategy desired by all ceramics.

Next, it was sought to meet the objective of this work, which is related to "identifying the variables that influence the process of elaboration of the sale price in the internal and external scope in ceramics". With this stipulated objective, it began by analyzing the life

cycle of the products that, according to Kotler (2019), the product has a life cycle, four points have to be verified: 1. The products have a limited life. 2. Product sales go through different stages, each of which presents different challenges, opportunities, and problems for the salesperson. 3. Profits go up and down at different stages of the product life cycle. 4. Products require different *marketing*, financial, production, purchasing, and human resource strategies at each stage of the life cycle.

Questioning the potters about the life cycle of the brick, considering the phases mentioned by Kotler (2019) in which he classifies the phases into: introduction, growth, maturity and decline, it was noticed that 25% evaluate that the brick is in a growth phase and 75% indicated that it is in the maturity phase. For the tile, 35% indicated that the product is in maturity and 65% that the product is in the decline phase. Mattos (2021) states that the life cycle of a product requires monitoring after its launch to anticipate possible discontinuity and incorporate all the product's needs throughout its life cycle. Bernardi (2017, p.47) points out that "prices follow the life cycles of the products as well as the penetration strategies and prices, prices to overcome the competition, maturation prices and price reduction, therefore, the objectives and factors of the life cycle, at each stage must be observed." Analyzing the prices of bricks, it is clear that maturation causes stagnation and a difficulty for companies to differentiate themselves from competitors in this product.

In the tile pricing process there is less competition because only four ceramics in Rondônia produce the product, largely because of the quality of the clay and the investment in preparation and manufacture of tiles, but the decline of the tile is justified by the drop in demand caused mainly by the entry of substitute products that harms the pricing process reducing the profit margin.

It was noticed that 60% present themselves as being observant, which indicates two distinct situations: the first is related to waiting for the position of the market leaders to adjust their prices, even with the need to readjust their prices, they do not do so while the leaders do not increase their prices, and the second is related to waiting for the prices of the leaders to position their price a little below, executing the well-known "umbrella" effect. Therefore, there is a relationship of submission in which the ceramics with lower production do not put their price first and always wait for the leaders to position themselves.

35% of ceramics are considered reactive, in which this strategy is based mainly on the company's internal costs, or on following competitors in their price decisions, or even in the sense of being agile in price changes practiced both in the upward and downward movements. Competition becomes fiercer with a downward trend in prices in the period of

the year when it rains intensely in the Amazon region, this period is called in the region as the Amazon winter (rainy season), which harms demand by reducing the price and only 5% said they are aggressive in the pricing process.

The ceramists were asked how they classify themselves in relation to market leadership and 25% consider themselves market leaders, as these are the companies that readjust their prices first and are followed by the others and 75% classified themselves as market followers. Cogan (2002) the strategies of price leaders are characteristic of organizations with large market shares and determine the price to be followed by the others in the sector.

Seeking economic theory, it is perceived that ceramics fit into the oligopolized competition market, where according to Cordeiro (2005, p.265) "describes oligopoly as when there is a reduced number of companies, whose products can be homogeneous or differentiated and close substitutes for each other, and there are also barriers to discourage the entry of new companies".

Following this line, Berto (2012, p.37) indicates that "in a typical oligopolistic industry there is generally no price war. Each company knows that if it increases its prices above the others, it may not be followed by the others and lose market share." However, "if it reduces prices, the others can follow it, reducing the result of all of them, which is also not in the interest of any of them". In oligopolistic firms, prices are less vulnerable to price fluctuations, they are fixed according to costs, plus a profit deemed reasonable. Difficulty found in the ceramic sector researched.

According to Guan Y, Cheung KS (2023) the theory of total cost pricing can lead to higher profits in monopoly or oligopoly markets. This is because companies in these markets have greater market power and can set prices above marginal cost. However, the extent of these profits depends on the elasticity of demand and the company's ability to differentiate its product from others. As demand is practically inelastic, the cartel tends to impose a price and divide the demand achieved by this price among the cartel participants.

On this point, the ceramic sector diverges, precisely in the part where "the cartel tends to impose a price and divide the demand achieved by this price among the cartel participants", because the level of rivalry between the potters also prevents the formation of a cartel. As Mankiw (2013, p.335) describes that "oligopolies would like to achieve monopolistic results, but this requires cooperation, which is very difficult to establish and maintain". Therefore, "to understand the economics of cooperation, one needs to learn a little about game theory and this theory allows us to understand why it is difficult to maintain cooperation".

There are even meetings between them with the aim of agreeing on prices, but the level of rivalry prevents them from turning into cartels, the big problem is exactly the market share that is presented as an item mentioned by 70% of the ceramists, demonstrating the concern with the division of the market and what generates all the pressure About the price, so there is no agreement on the prices practiced only the attempts. As can be seen in Table 07.

Table 07 - Participation in meetings with the objective of agreeing prices

Participation in a meeting with the aim of agreeing prices	Participation	Pricing contribution	Frequency of meetings
No - 20%	04	It has not contributed.	I never participated .
Yes - 80%	02 11 03	40% 60% 80%	Quarterly Quarterly Quarterly
No 20% Yes 80%	20	M. Weighted 61,25%	Quarterly

Source: 2021 survey data.

In Table 07, 20% of the ceramics do not participate in the meetings that take place on average quarterly, the 80% that participate indicate disparity between the contribution that these meetings bring to the pricing process, because as shown 02 ceramics stated that the meetings contributed with 40%, 11 indicated a contribution of 60% and 03 indicated a contribution of 80%, Calculating the weighted average, there is a contribution of 61.25% in prices.

In order to describe whether there are strategic alliances among the 16 ceramics companies participating in the meetings, 60% highlighted that there are no strategic alliances and 40% stated that there is collaboration on prices. In this study, 80% of the ceramics have the need to place their products in other markets and 20% are able to place their products in the place where the company has its plant, but there is no uniformity in the prices practiced, there is a fierce dispute for market share (*Market share*), which ends up bringing down the prices of companies that judge their products with average quality and those that need to place their products in other markets and According to the description of the ceramists themselves, 75% classify themselves as market followers.

According to Mankiw (2013, p.336) "game theory illustrates why oligopolies have difficulty maintaining monopolistic profits, each oligopolist has an incentive to cheat, making self-interest hinder the cooperative outcome with low production, high prices and monopoly

profits". To do so, it is enough to observe the standard deviation and Pearson's Coefficient of Variation calculated in the prices practiced by ceramics.

It was noticed that the market share occupies a prominent place cited by 65% of the respondents, the number and size of the companies operating in the market is mentioned by 30% of the participants and the degree of similarity of the products were indicated by 5% of the interviewees, none of the ceramics mentioned the size of the market.

It was raised with the ceramists among the external factors which most harm the pricing process and again the concern of the companies for the market share becomes evident, because for 80% of the ceramists the competition not adjusting the prices is one of the main factors, 10% pointed out the need to modify the prices in the opposite direction, when some are reducing the prices due to the "rainy season" for example and some ceramics indicated the need to adjust the prices to raise prices and 10% the need to have prices with more attractive values.

Among the internal and external factors that most influence the product pricing process, the ceramists highlighted: labor costs, raw material costs, demand, financial costs and competition. It can be seen that the item that most influences the price is the demand factor with 85% of citations, followed by the competition with 55%, tied with 45% are the cost of labor and raw materials and with 25% of the citations appear the financial costs.

Following the same reasoning, he was asked about the factors that affect the profit margin embedded in prices. For 35% of the interviewees, the cost of the product is what most affects the margin embedded in the price, 30% indicated the demand for the product, 20% indicated the volume of sales and 15% indicated the exclusivity of the product. Demand and Sales Volume together represent 50% of the citations of ceramists and both go together, since the profit margin is greatly affected by demand and sales volume, as the increase or decrease causes the ceramics to oscillate the profit margin up or down. Another factor that helps the margin of the products is the exclusivity of the product.

CONCLUSION

With the study carried out on the pricing process of the 20 (twenty) participating ceramics, it was observed the need to establish a process in which the policies, strategies and tactics for the sale price of the products and an adequate positioning of the product in the market are considered, because as observed in the field research, the strategy widely used by the ceramics focuses on granting discounts on the sale price, in a Table that favors Wholesalers/Retailers and Construction Companies, granting discounts that are around 15% on the sale price. In a more in-depth analysis of pricing tactics, it is observed that the

price per volume is cited by 85% of the ceramists, the price per package and covering the competitor's price is presented in 70% of the citations. These tactics used demonstrate the strength that wholesalers exert on ceramics, as wholesalers sell a good part of what is produced and the adoption of discount policies represents the dominant strategy in the sector. It should be noted that marketing aspects, such as product quality and market positioning, are little used, which can bring more competitiveness to companies.

There is little use of the break-even point for decision making on product pricing, the most used strategy indicated by 80% of ceramists is cost leadership as the main focus and only 20% indicated differentiation leadership. One of the objectives of the pricing policy is market share and the most used tactic in the pricing process is focused on lowering prices. It was noticed that the ceramics companies that present themselves as observers have two distinct strategies: the first is related to waiting for the position of the market leaders to adjust their prices, even with the need to readjust them, they do not do so until the leaders take this initiative; The second is related to waiting for the leaders to position their price a little lower, executing the well-known "umbrella" effect, so there is a submission relationship in which the ceramics with lower production always wait for the leaders to position themselves in relation to the price increase.

It is possible to observe a certain distrust in the efficiency of ceramics in controlling costs through data analysis, as some ceramics have difficulties in raising costs. Some ceramics indicated that the calculation is done manually and through the annotations and added to this fact they calculate the cost empirically and by approximations, which undermines the basis of the pricing process, which is the information related to costs. Another aspect to be taken into consideration is the impact of production costs being high and similar among companies that have an older production structure, such as ceramics that have ovens such as Abóbada, Paulistinha, Corujinha and Hoffman, with lower production capacities at a higher cost. This factor increases the need for a higher price, which is often not possible due to the entry of products manufactured in more modern plants and with more competitive prices.

As can be seen, 20% of the ceramics do not participate in the meetings between the ceramists, which take place on average quarterly. For 80% of the ceramics that participate in the meetings, there is a disparity between the contribution that these meetings bring to the pricing process. In this study, it was found that 80% have the need to place their products in other markets and 20% are able to place their products in the place where the company has its plant installed. But there is no uniformity in the prices charged, there is

competition for market share and according to the description of the ceramists themselves, 75% classify themselves as market followers.

Therefore, it is believed that the study provides contributions to the managers of ceramics in the central region of Rondônia - Western Amazonia/Brazil, to administrative science and to the development of the State. By developing this research to the activity, which considers the profile of the users and the characteristics of the ceramics, helping the process of pricing the products, contributing to the managerial practices in a market analysis where the need of the sector to price the products is highlighted, it is believed that there will be commercial gains that will contribute to the continuity of the companies, a sector that currently employs 714 people directly in the State of Rondônia. In addition, this study can be replicated in the case of other ceramics, located in other regions of Brazil and the world, which present the same characteristics of the problem addressed. Also, this study can be adapted and applied in other productive sectors that demand a structure of policy, strategy and tactics involving the pricing of products.

As limitations in the study, it is believed that only one month of production and commercialization of ceramic products was analyzed, when the ideal would be to follow up in a longer time, but it would be very difficult for the managers of the ceramics to allow a follow-up of the data collection carried out in this way. Another limitation to be pointed out is the problem of the pandemic caused by Covid-19, which hindered the scheduling of visits to ceramics and the application of the questionnaire. Finally, as a suggestion for future work, it is believed that the study on short-term financial management in ceramics would be relevant for the development of managers in this sector, since the reduction of prices to improve the issue of lack of working capital and increase the volume of sales does not present itself as an alternative that can be used in a lasting way. It needs to look for the source of short-term financial management problems, which with good strategic planning it would be possible to correct.

REFERENCES

1. Bernardi, L. A. (2017). Formação de preços: estratégias, custos e resultados (5ª ed.). São Paulo: Atlas.

2. Bertó, D. J., & Beulke, R. (2012). Precificação: Sinergia do marketing + finanças (2ª ed.). São Paulo: Saraiva.

3. Bhattacharya, A., Morgan, N. A., & Rego, L. L. (2022). Examinando porque e quando a participação de mercado impulsiona o lucro da empresa. Journal of Marketing, 86(4), 73-94. https://doi.org/10.1177/00222429211031922

4. Bruni, A. L., & Famá, R. (2019). Gestão de custos e formação de preços: com aplicações na calculadora HP12C e EXCELL (7ª ed.). São Paulo: Atlas.

5. Carvalho, E. C., & Oliveira, L. de. (2024). Reformulação do modelo de precificação de uma indústria de plástico flexível. Revista Produção Online, 24(1), 5238. https://doi.org/10.14488/1676-1901.v24i1.5238

6. Coelho, F. S. (2017). Formação de preços de produtos e serviços: modelo tridimensional de percepção relativa do produto, estratégias de preço e posicionamento da margem de lucro frente aos concorrentes. Rio de Janeiro: Edição do autor.

7. Cordeiro, M. P. (2005). Economia para administradores (S. A. dos Santos & J. F. de Oliveira, Orgs.). São Paulo: Saraiva.

8. De Toni, D., Milão, G. S., Saciloto, E. B., & Larentis, D. (2017). Estratégias e níveis de preços e seu impacto na rentabilidade das empresas. Revista de Administração, 52(2), 120-133. https://doi.org/10.1016/j.rausp.2016.12.004

9. Dezordi, A. P. R., Vieira, E. P., & Sausen, J. O. (2022). Gestão estratégica de custos no segmento de microcervejarias artesanais: variáveis de precificação do produto. Revista Gestão e Planejamento, 23, 379-398. https://doi.org/10.53706/gep.v.23.7422

10. Dias, G. H. V., Oliveira, C. E. de, Jacques, K. A. S., & Dias, É. M. de S. A. (2023). Análise de custos e proposta de um modelo de formação do preço de venda para produtos do setor de hortifrúti. Management in Perspective, 3(1), 3–32. https://doi.org/10.14393/MIP-v3n1-2022-70651

11. Domingues, O. G. D., Tinoco, J. E. P., Yoshitake, M., Paulo, W. L. de, & Claro, J. A. C. dos S. (2017). Gestão de capital de giro e formação do preço de venda praticado pelas micro e pequenas empresas. Revista Ambiente Contábil, 9(1), 77–96. https://doi.org/10.21680/2176-9036.2017v9n1ID8558

12. Farm, A. (2019). Pricing in practice in consumer markets. Journal of Post Keynesian Economics, 43(1), 61-75. https://doi.org/10.1080/01603477.2019.1616562

13. Guan, Y., & Cheung, K. S. (2023). Os custos de construção e os preços da habitação: uma teoria de precificação de custo total ou de licitação? Edifícios, 13(7), 1877. https://doi.org/10.3390/buildings13071877

14. Hahn, V. (2021). Price Dispersion and the Costs of Inflation. Journal of Money, Credit and Banking, 54(2-3), 459-491. https://doi.org/10.1111/jmcb.12870

15. Gerlach, H., & Nguyen, L. (2021). Price staggering in cartels. International Journal of Industrial Organization, 77, 102757. https://doi.org/10.1016/j.ijindorg.2021.102757

16. Instituto Brasileiro de Geografia e Estatística (IBGE). (2021). Inflação: conceito e causas. https://www.ibge.gov.br/explica/inflacao.php

17. Kotler, P., & Keller, K. L. (2019). Administração de marketing. São Paulo: Pearson Education.

18. Liozu, S. M., Feurer, S., Hinterhuber, A., et al. (2021). Teoria e práticas configuracionais de empresas que empregam múltiplas políticas de precificação: avaliando receitas de precificação efetivas e ineficazes em vários contextos de empresas. Journal of Revenue & Pricing Management, 20, 420-435.

19. Maia, P. A., Melo, V. A., & Dias, D. N. B. (2024). A importância da precificação para as micro e pequenas empresas: um estudo de caso numa empresa do ramo alimentício. Revista Produção Online, 23(4), 4996. https://doi.org/10.14488/1676-1901.v23i4.4996

20. Mankiw, N. G. (2013). Introdução à economia (A. V. Hastings, E. P. Lima, & M. J. Nunes Pinto, Trad.). São Paulo: Cengage Learning.

21. Matos Arndt, Z., & Vallim, R. (2023). Gestão de custos e precificação no setor de avicultura: um estudo de caso em granja de reprodução poedeira. Anais do Congresso Brasileiro de Custos - ABC. https://anaiscbc.abcustos.org.br/anais/article/view/5047

22. Mattos, A. L., Oyadomari, J. C. T., & Zatta, F. N. (2021). Pesquisa de precificação: Estado da arte e oportunidades futuras. Sage Open, 11(3). https://doi.org/10.1177/21582440211032168

23. Miqueletto, M. E. (2008). Formação do preço de venda: Uma análise do processo de formação em empresas madeireiras de grande porte de Curitiba e região metropolitana (Dissertação de Mestrado). Universidade Federal do Paraná, Curitiba, PR, Brasil.

24. Mota de Oliveira, P., & Sena, T. R. (2023). Formação de preço de serviço baseado em custos: aplicação prática em empresa de administração de condominial. ABCustos, 18(2), 27–44. https://doi.org/10.47179/abcustos.v18i2.669

25. Octoviany, M. (2023). Pricing strategies for new products. SSRN. https://ssrn.com/abstract=4326477

26. Pissinati, L. G., & Dias, E. (2022). A margem de contribuição como métrica de precificação visando lucro para a empresa. Revista Ibero-Americana de Humanidades, Ciências e Educação, 8(10), 4334–4347. https://doi.org/10.51891/rease.v8i10.7491

27. Porter, M. (2004). Estratégia competitiva: técnica para análise de indústria e da concorrência (2ª ed.). Rio de Janeiro: Elsevier.

28. Porter, M. (1989). Vantagem competitiva: criando e sustentando um desempenho superior (20ª ed.). Rio de Janeiro: Campus.

29. Receita Federal do Brasil. (1999). Instrução Normativa SRF Nº 162, de 31 de dezembro de 1998, publicada no DOU de 07/01/1999, seção, página 5.

30. Rounaghi, M. M., Jarrar, H., & Dana, L. P. (2021). Implementação da gestão estratégica de custos em empresas de manufatura: superando a rigidez de custos e aumentando a sustentabilidade corporativa. Ônibus Futur J, 7, 31. https://doi.org/10.1186/s43093-021-00079-4

31. Sardinha, J. C. (2013). Formação de preço: uma abordagem prática por meio da análise custo-volume-lucro. São Paulo: Grupo GEN.

32. Souza, A. A. de, Guerreiro, R., & Amaral, J. V. (2021). Associação entre o ambiente de precificação e a abordagem de preço baseada no valor. Contabilidade Vista & Revista, 32(3), 1–23. https://doi.org/10.22561/cvr.v32i3.5932

33. Sun, K.-A., & Lee, S. (2024). Como as abordagens estratégicas de precificação influenciam as decisões sobre taxas de franquia? Tourism Economics, 30(6), 1508-1530. https://doi.org/10.1177/13548166231218766

34. Yin, Y. L., Gousgounis, M., & Neubert, M. (2020). Estratégias e práticas de definição de preços para dispositivos médicos usados pelos consumidores. Journal of Revenue and Pricing Management, 19(3), 218-226. https://doi.org/10.1057/s41272-019-00220-7

35. Ziari, M., Ghomi-Avili, M., Pishvaee, M. S., & Jahani, H. (2022). Uma revisão sobre preços competitivos em problemas de gerenciamento da cadeia de suprimentos: modelos, classificação e aplicações. International Transactions in Operational Research, 29, 2082-2115. https://doi.org/10.1111/itor.13082