



STRATEGIC FEASIBILITY ANALYSIS OF NEW ENTRANTS IN THE APPAREL MANUFACTURING SECTOR IN BRAZIL

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ABSTRACT

This article aims at inferring the viability of a new entrant in the garment industry in the Brazilian market, from the perspective of scenario prospecting. Initially, a brief summary and an outline of the productive chain of the analyzed sector is presented, with the purpose of providing a greater contextualization on the subject treated. Next, a description is made the variables necessary to infer about the viability of the business and the projections of its possible values within each considered scenario, following logical justifications. Based on the projections of the defined variables, the viability of the intended business was analyzed within each prospective scenario. Finally, after making all the appropriate analyzes, it was concluded that the enterprise analyzed is feasible in all scenarios, but the optimistic scenario is more attractive.

Keywords: Prospective Scenarios; Business Viability; Clothing.



1. INTRODUCTION

Since the 1980s, a wave of trade liberalization has begun in a number of developing countries. Behind this trend was the conviction of policymakers that free trade could ensure improved quality, well-being, development and growth of business (Keller, 2004). In this panorama it was highlighted the absence of industrial policies for the textile sector.

The reality of companies in the Brazilian textile sector was permeated by drastic changes, creating a crisis between the various links in the chain, with the search for often individualized business solutions, reinforcing the sector's conflict.

Several aspects characteristic of the Brazilian textile chain lead to confrontation between the links, such as the great heterogeneity of the companies that compose the sector, which makes it difficult to integrate and converge a joint organized interest to generate greater bargaining power with the government; and the fact that the sectoral strategic organs of the government are positioned in the processes of bargaining by the regulation of the State, since the governmental action can create a potential antagonism within the textile chain.

According to Keller (2004), another characteristic is the absence of dynamic commercial mechanisms that promote defense against unfair commercial competitors or protect the country's competition against dumped and/or supported imports. The lack of such trade defense mechanisms could generate divergence, leading to a conflict process, as the whole chain would be affected as to its competitiveness if a link were to become a crisis.

In this way, the textile industry can be considered one of the sectors most affected by the process of commercial opening, suffering moments of extreme crisis, due to the great increase of imports, especially in the segment of artificial and synthetic yarns and fabrics mainly coming from Asian tigers (Mendes, 2003).

1.1. Productive chain

The productive chain of the textile industry macrosector presents basically three primary sources of inputs that result, at its other end, in three different product lines. By means of Figure 1, which summarizes the structuring of the productive chain of the sectors mentioned, one can better understand all the way covered by the initial inputs, going through all manufacturing processes, until they become final products.

The present article concentrates its focus at the end of this productive chain, more specifically in the clothing sec-

tor, with the purpose of providing a greater contextualization of this sector, as well as its productive chain is outlined.

1.2. Profile of the clothing sector

The garment industry in Brazil is made up of 29,000 companies (ABIT, 2017) - considering only garments with five or more registered workers - that employ approximately 1,479 million people directly and an additional 8 million indirectly. Included in this sum are companies of micro size (up to 19 employees), small (up to 99 employees), medium (up to 499 employees) and large (from 500 employees) (SEBRAE, 2013).

The staff of apparel manufacturing companies covers professionals at all skill levels: from unskilled workers to top-level professionals, including dressmakers, supervisors, ironing and finishing experts, operators of Computer Aid Design/Computer Aid Manufacturing, cutting and modeling specialists, production engineers, stylists and designers, among others.

It should be noted that, in Brazil, both the textile and garment industries are almost totally conformed by companies with 100% national capital, whose profits are not remitted abroad, but are reinvested in the country.

The Brazilian garment industry has suffered consecutive losses of market share against imported products, mainly in Asia, especially China. Since 2003, the share of the retail market in imported clothing has been growing steadily: participation from 1.26% in 2003 has jumped to around 15% in 2014, corresponding to a growth of 614% in just nine years (IEMI, 2016).

The loss of market share in the so-called large retail area specializing in the distribution of apparel is also great. According to a survey conducted by the Brazilian Textile Industry Association (ABIT, 2018, acronym in Portuguese) in 32 points of sale of large retail chains, the supply of imported products from the 2007 spring-summer collection corresponded to 3.5% of the total supply, while in the spring-summer 2014, this participation increased to 20.6%, an increase of 480% in just seven years.

Imports of clothing increased 144% from 2010 to 2014, while exports decreased by 19%. In 2010, the amounts generated by exports accounted for 16.6% of imports. In 2014, these figures represented only 5.5%, or less than a third of what they represented four years ago (Brazilian Network of International Business Centers, 2016).

The Brazilian garment industry has been affected, like the entire Brazilian manufacturing industry, due to the structural and economic problems of the Brazilian economy, such

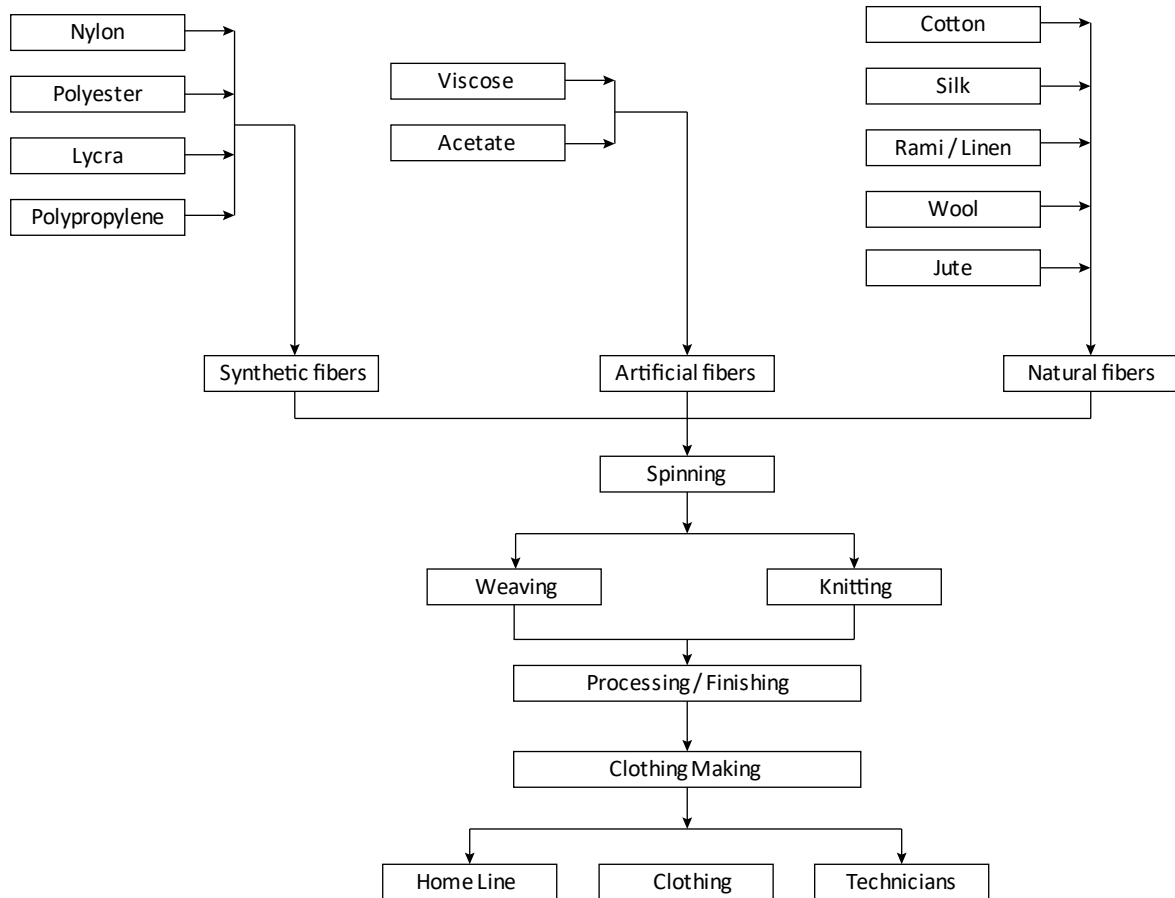


Figure 1. Structure of the textile and clothing production chain

Source: Costa et Rocha (2009, p. 163)

as the long period of appreciation of the national currency, abnormally high energy costs, precarious state of ports and highways that entails inefficiencies and high costs, and the complicated bureaucracy that has to be faced by companies. These added factors undermine the competitiveness of the sector and greatly impede the ability to face competition from imports, especially from Asia, which benefits from extraordinarily cheap labor, from the absence of sophisticated labor legislation, such as the Brazilian law, from the virtual absence of costs of environmental preservation and the numerous and substantial supports granted to its exporters, in particular China.

The garment industry houses companies that operate under various tax regimes, in accordance with legal provisions and options of the entrepreneur: the Simple Taxation Scheme, the Presumed Profit Scheme and the Real Profit Regime.

Research conducted by ABIT, with the technical support of RC Consultors, concluded that the current tax burden on apparel manufacturing is 17% of the gross revenue of companies with five or more employees.

In view of the situation described in the previous paragraphs, the entrepreneurs in the garment industry, the vast majority, opted for the simple taxation regime. This option, a feature used for the company to be minimally competitive, has led the garment industry in Brazil to the “Peter Pan syndrome”: companies cannot exceed certain levels of billing, since the incidence of a higher tax burden, added to the myriad of accompanying obligations, makes it impossible to compete in the market.

When the entrepreneur approaches this billing threshold, he usually decides to stop growing and other companies, also opting for Simple tax plan, come up to try to supply the market demand, to the detriment of the growth of existing companies, as would be natural in the process of industrial development. The consequences of this situation are dire. Small businesses do not achieve gains in scale and productivity in their operations and are not in a position to meet large orders originating from large-scale retail in quantity, quality and competitive prices.



Exports of clothing articles					
(Thousand US\$)					
Products	2010	2011	2012	2013	2014
Knitted clothing	94.400	98.150	79.126	72.000	75.688
Flat cloth clothing	72.132	71.317	65.375	68.232	59.396
Clothing	166.532	169.468	144.501	140.323	135.085
Socks	6.380	6.606	5.768	5.451	6.147
Accessories	3.719	4.151	3.648	4.086	4.025
Home Line	221.396	119.373	91.553	79.063	63.775
Other clothing articles	25.714	32.783	31.395	26.574	21.277
Total Confection	423.741	332.381	276.864	255.379	230.309

Table 1. Historical inflation

Source: Brazilian Network of International Business Centers (2016, p. 17)

According to a survey carried out by the Institute of Industrial Studies and Marketing (IEMI, 2016, acronym in Portuguese), between 2007 and 2012 sales of large-area retail sales increased by 39% while sales of small shops and independent sales outlets grew only 16.5%. That is, the large retail area grew at speed almost three times higher than the small stores (network or independent), in this period.

The sector in question has a great potential for development in the medium term. The demands have been growing steadily and the barriers to new entrants are very small, which favors the frequent emergence of new micro-enterprises. However, the constant loss of market for imported products (mainly Asian) is a worrisome factor for the sector, which demands new policies to protect the domestic industry. To do so, a scenario analysis was carried out to identify the strategic viability of new entrants in the textile sector.

2. THEORETICAL REFERENCE

The analysis of the future from the perspective of scenarios is an increasing activity of management base that aims at minimizing the risks and uncertainties inherent to the market in which the business is inserted, making possible the prior formulation of strategic alternatives to the occurrence of each of the different future situations defined as viable.

According to Schwartz (2000), the scenarios appear for the first time shortly after World War II, as a method of planning within the military area. The American Air Force tried to imagine what its opponent would try to do and prepared alternative strategies. In the 1960s, Herman Kahn, who was part of the Air Force group, improved the scenarios as a tool for commercial use.

The first to use the word “prospective” was the philosopher and pedagogue Frances Gastón Berger in his work *The Prospective Attitude* of 1957, setting out how to describe a desirable future for the world, and Berger proposed the use of the term “prospective” to show the need for a forward-looking attitude, and because the word “foresight” was too impregnated with the sense of prophecy. In this way, it was intended to separate concepts of forecasting (constructing a future in the image of the past) and prospective (in which the future is decidedly different from the past) (Marcial et Grumbach, 2008, p. 28).

Schoemaker (1995), on the other hand, argues that prospective thinking should involve the greatest richness of detail possible and can be applied to any situation where it identifies the existence of any type and level of uncertainty. The methodology of scenario building in business environments was introduced by Porter (1992), and it was a technique based on the identification of variables with considerable uncertainty that were relevant to the business. On top of these variables, prospective scenarios are set up.

The term scenery derives from the Latin theatrical term “*scaenarium-i*”, which means the script of a play. The main elements for the conceptualization and the understanding of the technique are the same of the modern theater, which are: scenarios, scenes, trajectories, and actors. The analysis of scenarios is characterized as the creative or imaginative study of the future with its own approach and methodology. By enabling organizations to not only create their future scenarios, but also, through the unfolding of their scenes and trajectories, to build quick responses



to changing environments (Mortiz et al., 2008).

As Godet and Roubelat (1996) report, the term “*la prospective*” was first used in 1957 by Gaston Berger, a French philosopher and pedagogue, to emphasize “a forward-looking attitude”.

According to Godet (2006), this French term is generally translated into English as “foresight” or “future studies”, with the idea of anticipating the occurrence of future events that would be considered within the analysis in question. This author also points out the difference between the terminology, in the Anglo-Saxon language, of the terms “forecast” and “foresight”. The first one, in its translation into Portuguese, would be more closely associated with the term “prediction”, which is more linked to the idea of trying to predict or anticipate the outcome of some future event; while the latter would be more closely associated with the term “prospecting”, which, in turn, would be more linked to the idea of trying to exploit as many possible and probable future outcomes of the future event in question.

Godet (1983) also approaches the prospective study and the construction of scenarios as a systematic process, in which one must seek to define the supposed scenarios in a structured and concise but limited information way, in order to reduce the complexity of the analysis. For Carvalho (2009), the final decision should always involve the intelligence and the critical sense of the group, with the tool of prospection serving as support.

Scenario prospecting has transformed and reached new heights in the early 1970s, with the work of French wholesaler Pierre Wack, in the area of planning for the future of Royal Dutch Shell, stressing the need to create a new strategic tool that would help the company in its long-term planning.

The results achieved by Royal Dutch Shell, with the new focus on seeing the future, made the company world-renowned for pioneering the use of scenarios, which resulted in the valorization and recognition of the technique, especially its proactive stance in the face of the crisis of oil in the 1970s.

In 1988, with the emergence of the Global Business Network (GBN) – a prospecting company created by Schwartz and Wack – began to popularize the use of scenarios as a strategic management tool for Anglo-Saxon companies and their dissemination and expansion throughout the organizational world from the 1990s onwards.

Marcial et Grumbach (2002), researchers of the methods, affirm that the scenario-making practice is considerably recent in Brazil. The first companies to use this practice were the National Economic and Social Development Bank

(BNDES), Eletrobrás, Petrobrás and Eletronorte, in the mid-1980s, because they operated with projects with long maturation horizons, which required a long-term vision. A new use of scenarios in Brazil was coordinated by the former Secretariat for Strategic Affairs (SAE) of the Presidency of the Republic, which in 1996 began the studies that generated “Extrapolatory Scenarios of Brazil in 2020” and, in 1998, “The Desired Scenarios for Brazil”.

According to Marcial et Grumbach (2008), the prospect of a complete scenario usually contains seven main characteristics or components.

- The title: the title that refers to the scenario, and it must condense the essence of written history, giving the idea of the logic of each scenario;
- Philosophy: it synthesizes the movement or the fundamental direction of the considered system, constituting the central idea of the scenario;
- The variables: they represent aspects or elements of the considered context, in view of the objective of the scenario;
- Actors: are the individuals or groups of decision-makers, organizations or class associations that influence or receive significant influence from the context considered in the scenario;
- The scene: it is a view of the situation considered at a given moment of time, which describes how actors and variables are organized or linked together at that moment.
- Trajectory: it is the path followed by the system in the time horizon considered; it describes the movement of this system from the initial scene to the final scene, and may even be irregular.
- Final scenarios: the conclusions of the work, linking the whole of the work to the number of scenarios envisaged or intended.

For the authors, other important characteristics of the scenarios are: plural vision of the future, emphasis on the qualitative aspect and ability to break mental models.

After the elaboration of any scenario, one must verify its consistency, that is, its internal coherence and if there is mutual compatibility between the philosophy, the trajectory and the scenes that integrate it.

Scenario analysis protects organizations in developing a proactive approach that identifies and responds to changes



in the complex environment, helping organizations thrive in turbulent times (Calof, 2016).

3. METHODOLOGICAL ASPECTS

The present work aims to carry out an economic feasibility analysis of the insertion of a new entrant in the garment industry in Brazil, from the perspective of scenarios prospectation. For this, it was initially defined which variables would be the most important for the analysis.

As one wishes to infer about the viability of the business in each scenario, it is necessary to estimate what would be the possible net profit in each scenario. However, net income depends on net revenue, total costs and tax rates, which, in turn, depend on other variables and so on, as shown in Figure 2.

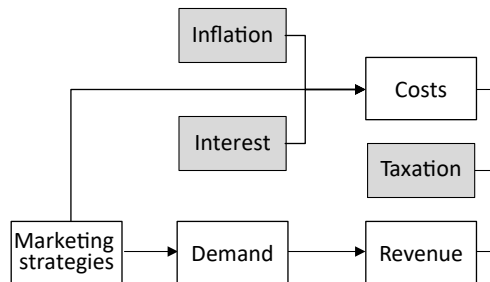


Figure 2. Impact structure of variables

Source: The authors themselves

The dependence relation of each variable is shown more clearly in Figure 2. It is noticed that the revenue depends on the demand, which, in turn, depends on the marketing strategy adopted. Costs, on the other hand, are impacted by inflation and interest rates, as well as by the chosen marketing strategy. Inflation, the interest rate and the tax rate are economic variables and the values assumed by them depend directly on the public policies adopted by the economic and financial authorities that govern the subject in Brazil.

In relation to the variable “price”, which impacts both demand (negatively) and revenue (positively), in this work, it was chosen to keep it constant in all scenarios, in order to consider that variations in demand are solely due to the adopted marketing strategy.

It should be noted that, as this work seeks to infer about the feasibility of opening the intended business, there is no range of alternatives to be chosen by the decision maker - which should be analyzed within each scenario. The decision

maker has only two alternatives, to open or not to open the business, and his choice will be based on the analysis of the profitability of this business.

It was also decided not to make an impact analysis versus dependence between the variables - in order to generate a matrix of cross-impacts that would filter the less relevant variables, due to the reduced number of variables involved and the crucial importance of each of them in the analysis.

4. ELABORATION OF THE SCENARIOS

This work will consider the prospectation of three different scenarios: an optimist, which idealizes favorable economic conditions for new investments; a moderate one, which considers the indifference of economic conditions in relation to new investments; and a pessimistic, which presupposes economic conditions unfavorable to new investments. In the sequence, the reasoning followed for the projection of each of the variables involved within each scenario is described.

4.1. Inflation

Inflation is a word often associated with the loss of the value of money over time. However, it is not correct to think of inflation as something that diminishes the purchasing power of money, it would be better to think of it as the gradual increase in prices.

However, not all products suffer the same price increases in some periods; some show increases much more significant than others. Therefore, it would not be correct to apply the same inflation index throughout the analysis that will be carried out later. In this sense, in this work the General Market Price Index (IGP-M, acronym in Portuguese) was chosen in order to perform the inflation analysis related to rental values (since this is the main index used for this purpose). On the other hand, the values related to daily expenses (power, telephone, internet, etc...) had their inflationary analysis given through the Extended Consumer Price Index (IPCA, acronym in Portuguese), which is best used for this type of price. Finally, the values related to production costs had their inflationary analyzes based on the Producer Price Index (PPI), more specifically on the apparel sector.

Thus, the monthly historical series of these three indices were analyzed from January 2010 to May 2018. These values were collected directly from the website of the Brazilian Institute of Geography and Statistics (IBGE, acronym in Portuguese). The monthly values obtained from the source were transformed into their annual equivalents and, from these the mean and the standard deviation were extracted, as presented in Table 2.



Table 2. Inflationary history

Period	IPCA	IGPM	IPP - Manufacture of wearing apparel and accessories
jan/10	9,38	7,83	2,55
fev/10	9,77	15,12	12,01
mar/10	6,42	11,88	-6,06
mar/18	1,09	7,96	13,76
apr/18	2,67	7,06	20,70
may/18	4,91	17,88	35,28
Mean	6,20	6,62	6,29
Standard deviation	3,78	7,18	13,80

Source: Prepared from IBGE (2018)

In the optimistic scenario, the values adopted in the projections considered the average; in the moderate scenario, the mean plus one standard deviation was used; and in the pessimistic scenario, the mean plus two standard deviations were used, in order to have the projection presented in Table 3.

Table 3. Inflation projections in each scenario

Index	Optimistic	Moderate	Pessimistic
IPCA (%a.a.)	6,20	9,98	13,76
IGP-M (%a.a.)	6,62	13,80	20,97
IPP (%a.a.)	6,29	20,09	33,89

Source: The authors themselves

4.2. Interest

In the situation to be analyzed, we are studying the purchase of some capital goods, which will be partially financed. The intended financing is the special credit line provided by BNDES for this purpose, FINAME.

When trying to search for data on this variable, it was verified the absence of a record of its historical values. However, Circular No. 06/2015, found on the BNDES website itself, establishes a fixed rate of 7% per year to finance the type of good intended. Without the support of more information on the historical values of this rate, its projection in the three scenarios followed the this logic: in the optimistic scenario it was considered that this annual rate of 7% would remain unchanged; in the moderate scenario it was considered a 2% increase in the rate; and, finally, in the pessimistic scenario an increase of 4% was considered in the rate, according to Table 4.

Table 4. Projection of the interest rate in each scenario

Interest	Optimistic	Moderate	Pessimistic
FINAME rate (% per year)	7,00	9,00	11,00
FINAME rate (% per year)	0,57	0,72	0,87

Source: The authors themselves

4.3. Taxation

Regarding taxation, it was considered that in all projections the projected revenue value would not exceed the limits of the National Simple Tax Plan. Thus, the table containing the taxation applicable to revenue was taken, and in the projections the following logic was used: in the optimistic scenario, the values in the table will remain unchanged; in the moderate scenario, the values in the table will increase by 10% from the current values; and in the pessimistic scenario, the values in the table will suffer a 20% increase from the current values. In this way, the values projected in Table 5 were obtained.

Table 5. National Simple Tax Plan table projected in scenarios

Gross Revenue in 12 months (in R\$)	Optimistic	Moderate	Pessimistic
	Current value	+10%	20%
Up to 180,000.00	6,00%	6,60%	7,20%
From 180,000.01 to 360,000.00	8,21%	9,03%	9,85%
From 360,000.01 to 540,000.00	10,26%	11,29%	12,31%
From 540,000.01 to 720,000.00	11,31%	12,44%	13,57%
From 720,000.01 to 900,000.00	11,40%	12,54%	13,68%
From 900,000.01 to 1,080,000.00	12,42%	13,66%	14,90%
From 1,080,000.01 to 1,260,000.00	12,54%	13,79%	15,05%
From 1,260,000.01 to 1,440,000.00	12,68%	13,95%	15,22%
From 1,440,000.01 to 1,620,000.00	13,55%	14,91%	16,26%
From 1,620,000.01 to 1,800,000.00	13,68%	15,05%	16,42%
From 1,800,000.01 to 1,980,000.00	14,93%	16,42%	17,92%



From 1,980,000.01 to 2,160,000.00	15,06%	16,57%	18,07%
From 2,160,000.01 to 2,340,000.00	15,20%	16,72%	18,24%
From 2,340,000.01 to 2,520,000.00	15,35%	16,89%	18,42%
From 2,520,000.01 to 2,700,000.00	15,48%	17,03%	18,58%
From 2,700,000.01 to 2,880,000.00	16,85%	18,54%	20,22%
From 2,880,000.01 to 3,060,000.00	16,98%	18,68%	20,38%
From 3,060,000.01 to 3,240,000.00	17,13%	18,84%	20,56%
From 3,240,000.01 to 3,420,000.00	17,27%	19,00%	20,72%
From 3,420,000.01 to 3,600,000.00	17,42%	19,16%	20,90%

Source: Prepared from BNDES Circular No. 06/2015

4.4. Marketing strategies and their costs

Three different advertising strategies were devised. Considering a heated economic scenario (inflation below target and low interest rates), where the population would be more likely to consume, a more aggressive advertising strategy was thought: the brand would be publicized through billboards, advertisements in advertising radio and digital media (ads on strategic sites and on Facebook).

Considering a lukewarm economic scenario (inflation targeting and moderate interest rates), where a smaller part of the population would still be prone to consumption, it was thought a rather less bold strategy: the brand would only be announced through advertisements in radio stations and digital media.

Finally, considering a depressed economic scenario (inflation above target limits and higher interest rates), where the majority of the population would not be very prone to consumption, a more conservative strategy was thought: the brand would only be disclosed by digital media. The costs of each strategy, as well as its rationale, are shown in Tables 6, 7 and 8.

Table 6. Cost of billboard advertising in cities in the state of Rio de Janeiro

Billboard ads			
City	Rio de Janeiro	Niterói	Macaé
Annual unit cost	R\$ 57.744,00	R\$ 19.320,00	R\$ 15.312,00
Number of billboards	4	2	2
Total annual cost	R\$ 300.240,00		

Source: The authors themselves

Table 7. Radio Advertisement Cost

Ads on radio stations			
Radio	Mania	Transamérica	Mix
Cost per advertisement	R\$ 35,33	R\$ 46,20	R\$ 40,00
Number of ads	720	720	720
Total annual cost	R\$ 87.504,00		

Source: The authors themselves

Table 8. Radio Advertisement Cost

Disclosure in digital media			
Site	Ticket Club	Partner Blogs	Facebook
Annual unit cost	Free	Free	R\$ 350,00
Total annual cost	R\$ 350,00		

Source: The authors themselves

It is perceived that the costs of adopting each type of marketing strategy increase exponentially from the most conservative to the most aggressive. Thus, the values of these assumed variables within each scenario correspond to the strategies adopted, as shown in Table 9:

Table 9. Projections of marketing strategy and its cost in each scenario

Marketing strategy	Optimistic	Moderate	Pessimistic
	Aggressive	Intermediate	Conservative
Means of communication	Billboard, radio and internet	Radio and Internet	Internet
Cost of marketing strategy	R\$ 388.094,00	R\$ 87.854,00	R\$ 350,00

Source: The authors themselves



4.5. Demand

As mentioned earlier, in this analysis it will be considered that demand will be impacted solely and exclusively by the marketing strategy adopted (since the prices adopted and all other market variables will be the same in the three scenarios). In this sense, the reach and effectiveness of each chosen marketing strategy were verified with specialists in order to ascertain the demand from each of them, as shown in Tables 10, 11 and 12.

Table 10. Demand from ads on billboards

Billboard ads	
Reach (in number of people per year)	540.000
Sales conversion rate	1,20%
Annual demand	6.480

Source: The authors themselves

Table 11. Demand from ads on the radio

Ads on radio stations	
Reach (in number of people per year)	1.080.000
Sales conversion rate	0,40%
Annual demand	4.320

Source: The authors themselves

Table 12. Demand from ads in digital media

Disclosure in digital media	
Reach (in number of people per year)	12.000.000
Sales conversion rate	0,02%
Annual demand	2.400

Source: The authors themselves

Therefore, considering the means of disclosure that each of the strategies contemplates, it was obtained the demand originated from the choice of each of the strategies and, therefore, the corresponding values, according to Table 13.

Table 13. Demands projected in each scenario

	Optimistic	Moderate	Pessimistic
Demand	13.200	6.720	2.400

Source: The authors themselves

4.6. Revenue

As revenue is directly proportional to demand, to obtain the values of its projections, it is sufficient to multiply the demand contained in each scenario by the net price (price already discounted from direct taxes) adopted. As the net

price adopted in this study was R\$ 100, the revenue projections were as follows (Table 14):

Table 14. Projected revenue in each scenario

	Optimistic	Moderate	Pessimistic
Revenue	R\$ 1.320.000	R\$ 672.000	R\$ 240.000

Source: The authors themselves

4.7. Costs

Costs were divided into five main subcomponents: salaries, marketing strategy cost, fixed cost, variable cost, and financing. Then the logic adopted for the composition of each one of them will be explained in the projections.

Wages

Table 15 summarizes the staff by activity.

Table 15. Projection of staff in each scenario

Employees - Operational			
Activity	Optimistic	Moderate	Pessimistic
Preparing and stamping	3	1	1
Packing and dispatching	2	1	
Employees - Administrative			
Activity	Optimistic	Moderate	Pessimistic
Secretary	1	1	1
SAC attendant	1		
Total	7	3	2

Source: The authors themselves. *SAC: Customer service.

In an optimistic scenario, a table with seven employees will be considered, with five in the operational part and two in the administrative part; three will be responsible for the production of shirts (preparing and stamping), two responsible for packaging and dispatching ready-made shirts, a secretary, and a customer service representative (SAC).

In the moderate scenario, a table will be considered with only three employees, two in the operational part and one in the administrative part, of which one will be responsible for the production of the shirts, one responsible for the packing and dispatch, and a secretary who will be responsible for answering the SAC calls.



Finally, in a pessimistic scenario, it will be considered a table with only two employees. One of them is in charge of all the operational part (production, packaging and dispatching) and a secretary who will be responsible for handling the SAC calls. Each of these employees will have a monthly remuneration, as described in Table 16:

Table 16. Individual wages in each scenario

Wages - Operational			
Activity	Optimistic	Moderate	Pessimistic
Preparing and stamping	R\$ 2.500,00	R\$ 2.500,00	R\$ 2.800,00
Packing and dispatching	R\$ 2.500,00	R\$ 2.500,00	
Wages - Administrative			
Activity	Optimistic	Moderate	Pessimistic
Secretary	R\$ 3.500,00	R\$ 3.800,00	R\$ 3.800,00
Attendant SAC	R\$ 2.300,00		

Source: The authors themselves. * SAC: Customer Service

Adding the values of each salary by the number of employees responsible for each activity (according to Table 15), you have the total monthly amount paid in the form of salaries. Multiplying this value by 14 (twelve months, plus vacation, plus thirteenth and additional charges), you will have the total annual cost with salaries, according to Table 17:

Table 17. Projection of total disbursement with salaries in each scenario

	Optimistic	Moderate	Pessimistic
Annual Salary - including holidays and 13 th salary	R\$ 256.200,00	R\$ 123.200,00	R\$ 92.400,00

Source: The authors themselves

Table 19. Projection of total fixed cost in each scenario

Annual Expenses	Current Values	Fixed cost			Inflator Index
		Optimistic	Moderate	Pessimistic	
Rent	R\$ 24.000,00	R\$ 25.588,70	R\$ 27.310,87	R\$ 29.033,04	IGPM
Energy	R\$ 6.000,00	R\$ 6.372,19	R\$ 6.599,01	R\$ 6.825,83	IPCA
telephone	R\$ 1.200,00	R\$ 1.274,44	R\$ 1.319,80	R\$ 1.365,17	IPCA
Internet	R\$ 2.400,00	R\$ 2.548,88	R\$ 2.639,60	R\$ 2.730,33	IPCA
Total	R\$ 33.600,00	R\$ 35.784,21	R\$ 37.869,28	R\$ 39.954,37	

Source: The authors themselves

Cost of marketing strategy

The projected values of the annual costs resulting from the adoption of one or another marketing strategy within each scenario were as follows (Table 18):

Table 18. Projection of costs of marketing strategies in each scenario

	Optimistic	Moderate	Pessimistic
Marketing strategy	Aggressive	Intermediate	Conservative
Communication vehicles	Billboard, radio and internet	Radio and internet	Internet
Cost of marketing strategy	R\$ 388.094,00	R\$ 87.854,00	R\$ 350,00

Source: The authors themselves

Fixed cost

The fixed costs incurred are linked to the daily expenses of the company. In the analysis performed in this work, the costs of rent, electricity, telephone and internet were considered as fixed costs. Thus, the annual values of each of these were estimated in current terms (today), and later their projections were calculated, inflating these values. The values projected for the optimistic scenario consider an inflation equal to the average (which was shown previously) of the inflation index used to inflate each account. The moderate scenario, on the other hand, considers inflation equal to the average inflator index plus a standard deviation. And finally, the pessimistic scenario, considers inflation equal to the average inflator index plus two standard deviations. Table 19 demonstrates this more clearly.



Table 20. Projection of unit variable costs in each scenario

Unit Expenditure	Current Values	Unit Variable Cost			Inflator Index
		Optimistic	Moderate	Pessimistic	
Blouses	R\$ 15,00	R\$ 15,94	R\$ 18,01	R\$ 20,08	IPP
Printing Services	R\$ 3,00	R\$ 3,19	R\$ 3,60	R\$ 4,02	IPP
Boxes	R\$ 2,00	R\$ 2,13	R\$ 2,40	R\$ 2,68	IPP
Paper	R\$ 0,25	R\$ 0,27	R\$ 0,30	R\$ 0,33	IPP
Unit Cost of Production	R\$ 20,25	R\$ 21,52	R\$ 24,32	R\$ 27,11	IPP

Source: The authors themselves. * IPP - Producer Price Index

Variable cost

Variable costs are directly linked to production; therefore, all unit variable costs of each component of the final product were estimated. These costs, in turn, were projected by inflating them in a manner analogous to the previous item. That is, the optimistic scenario considers inflation equal to the average inflator index, the moderate considers inflation equal to the average plus a standard deviation of this index, and the pessimistic scenario considers inflation equal to the average plus two standard deviations. Table 20 demonstrates this more clearly.

However, in order to obtain the annual value of the variable cost, it is necessary to multiply the unit cost of production by the number of parts produced (which in this case is equal to the demand, since the company will only produce the parts after the sales confirmations), the results of which are described in Table 21.

Table 21. Projection of total variable cost in each scenario

Demand	Optimistic	Moderate	Pessimistic
	13200	6720	2400
Unit Cost of Production	R\$ 21,52	R\$ 24,32	R\$ 27,11
Total Variable Cost	R\$ 284.064	R\$ 1.702	R\$ 65.064

Source: The authors themselves

Financing

The latter sub-account requires a little more attention to be understood, since for each scenario a different situation will be considered. As mentioned earlier, the optimistic scenario considers that the economy is warm and favorable to investments, so the market keeps consumption at very attractive levels. The moderate scenario, however, considers the economy to be lukewarm, that is, consumption levels are moving at reasonable levels. And, in turn, the pessimistic scenario considers that the economy is quite low, that is to say, the consumption in the market does not present great force.

Optimistic scenario

Table 22. Initial investment in the optimistic scenario

Assets	Quant.	Initial investment		Down Payment	Amount Financed
		Asset Value	Total Value		
Printer	3	R\$ 50.000,00	R\$ 150.000,00	R\$ 45.000,00	R\$ 105.000,00
Press	3	R\$ 5.000,00	R\$ 15.000,00	R\$ 4.500,00	R\$ 10.500,00
Digitalizing Table	3	R\$ 10.000,00	R\$30.000,00	R\$ 9.000,00	R\$ 21.000,00
					R\$ 136.500,00

Source: The authors themselves

Table 23. Financing in the optimistic scenario

Financing				
Amount Financed	Term (in months)	Interests (%a.m.)	Installments	Annual Installments
R\$ 136.500,00	24	0,57	R\$ 6098,16	R\$ 73.177,92

Source: The authors themselves



Thus, in this analysis it was considered that in the pessimistic scenario one would invest only in an asset of each type of the necessary ones for the operation of the company. In the moderate scenario, given the best market con-

ditions, it was considered that two assets of each type would be invested. And, in the optimistic scenario (due to the warming of the market), it was decided to invest in three assets of each type.

Moderate Scenery

Table 24. Initial investment in the moderate scenario

Initial investment					
Assets	Quant.	Asset value	Total value	Down Payment	Amount Financed
Printer	2	R\$ 50.000,00	R\$ 100.000,00	R\$ 30.000,00	R\$ 70.000,00
Press	2	R\$ 5.000,00	R\$ 10.000,00	R\$ 3.000,00	R\$ 7.000,00
Digitalizing Table	2	R\$ 10.000,00	R\$ 20.000,00	R\$ 6.000,00	R\$ 14.000,00
					R\$ 91.000,00

Source: The authors themselves

Table 25. Financing in the moderate scenario

Financing				
Amount Financed	Term (in months)	Interests (% per month)	Installments	Annual Installments
R\$ 91.000,00	24	0,72	R\$ 4.142,66	R\$ 49.711,96

Source: The authors themselves

Pessimistic scenario

Table 26. Initial investment in the pessimistic scenario

Initial investment					
Assets	Quant.	Asset value	Total value	Down Payment	Amount Financed
Printer	1	R\$ 50.000,00	R\$ 50.000,00	R\$ 15.000,00	R\$ 35.000,00
Press	1	R\$ 5.000,00	R\$ 5.000,00	R\$ 1.500,00	R\$ 3.500,00
Digitalizing Table	1	R\$ 10.000,00	R\$ 10.000,00	R\$ 3.000,00	R\$ 7.000,00
					R\$ 45.500,00

Source: The authors themselves

Table 27. Initial investment in the pessimistic scenario

Financing				
Amount Financed	Term (in months)	Interests (% per month)	Installments	Annual Installments
R\$ 45.500,00	24	0,87	R\$2.109,72	R\$ 25.316,65

Source: The authors themselves

In all scenarios, according to the rules of FINAME (BNDES special line of credit for the financing of machines and equipment), each asset will be bought by giving a 30% deposit and financing the remainder within 24 months by the system PRICE (system of constant installments, or French system of financing). However, for each scenario a different interest rate was considered, as previously shown in the Interest ses-

sion. In this way, you obtain the amount of the monthly installment of the financing to be paid, which, when multiplied by 12 (months in a year), it gives you the annual cost of the financing. The diagram below describes this more clearly.

Therefore, it was possible to project the cost of financing for each of the three scenarios analyzed (Table 28).



Table 28. Cost of projected financing in each scenario

	Optimistic	Moderate	Pessimistic
Financing	R\$ 73.177,92	R\$ 49.711,96	R\$ 25.316,65

Source: The authors themselves

5. RESULTS

With this, we have all the necessary variables already designed for analysis in each scenario, and thus, by consolidating and concatenating all this information, we can analyze the scenario as a whole. The consolidation of all the information obtained so far has resulted in the following projection of scenarios (Table 29):

6. CONCLUSIONS

When analyzing the projections carried out in each scenario, one can verify that the business idea has proved viable in each of the projected scenarios. Of course, in the more favorable (optimistic) scenario the business is more attractive, whereas in the less favorable (pessimistic) scenario the business is much less attractive.

However, the present study allowed verifying that – considering the assumptions that were made – the business idea presented would have a real chance of success even if it faced an economic scenario less favorable to new investments.

Thus, it was possible to verify that the prospecting of scenarios is an extremely useful tool to aid decision-making, especially when analyzing the economic-financial feasibility of projects. By exploring a range of possible scenarios, the decision-maker is able to take an extremely broad view of a range of possible futures that will determine much more conscious decision-making about the potential adversities that could be encountered.

REFERENCES

Associação Brasileira de Indústria Têxtil – ABIT (2017), Perfil do setor, disponível em: <http://www.abit.org.br/cont/perfil-do-setor> (acesso em 31 ago. 2018).

Associação Brasileira de Indústria Têxtil – ABIT (2018), O poder da moda, disponível em: <http://www.abit.org.br/adm/arquivo/publicacao/120429.pdf> (acesso em 31 ago. 2018).

Banco Nacional de Desenvolvimento Econômico e Social - BNDES (2015), Circular SUP/AOI nº 06, Rio de Janeiro, 12 de fevereiro, disponível em: https://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/produtos/download/circulares/2015/15Circ006_AOI.pdf (acesso em 3 out. 2018)

Calof, J. (2016), Government sponsored competitive intelligence for regional and sectoral economic development: canadian experiences. *Journal of Intelligence Studies in Business*, Vol. 6, No. 1, pp. 48-58.

Table 29. Conclusive analysis of projected scenarios

Variable	Optimistic	Moderate	Pessimistic
IPCA	R\$ 6,20	R\$ 9,98	R\$ 13,76
IGP-M	R\$ 6,62	R\$ 13,80	R\$ 20,97
IPP	R\$ 6,29	R\$ 20,09	R\$ 33,89
FINAME rate (% per year)	R\$ 7,00	R\$ 9,00	R\$ 11,00
FINAME rate (% per month)	R\$ 0,57	R\$ 0,72	R\$ 0,87
National Simples Tax Plan Fee	R\$ 7,60	R\$ 7,52	R\$ 4,80
Marketing strategy	Aggressive	Intermediate	Conservative
Communication Vehicles	Billboard, Radio and Internet	Radio and Internet	Internet
Demand	13200	6720	2400
Annual Revenue	R\$ 1.320.000,00	R\$ 672.000,00	R\$ 240.000,00
Financial Services	R\$ 73.177,92	R\$ 49.711,96	R\$ 25.316,65
Fixed Costs	R\$ 35.784,20	R\$ 37.869,28	R\$ 39954,36
Variable costs	R\$ 284.113,19	R\$ 163.416,41	R\$ 65.069,06
Salary	R\$ 256.200,00	R\$ 123.200,00	R\$ 92.400,00
Cost of Marketing Strategy	R\$ 388.094,00	R\$ 87.854,00	R\$ 350,00
Total Cost	R\$ 1.037.369,31	R\$ 462.051,65	R\$ 223.090,07
Gross Profit	R\$ 282.630,69	R\$ 209.948,35	R\$ 16.909,93
Income Tax	R\$ 21.479,93	R\$ 15.788,12	R\$ 811,68
Net Profit	R\$ 261.150,76	R\$ 194.160,23	R\$ 16.098,25

Source: The authors themselves



- Carvalho, D. E. (2009), *Future Studies, Research Journal*, Vol. 1, No. 1, pp. 2-27.
- Costa, A.C.R., Rocha, E. R. P. (2009), “Panorama da cadeia produtiva têxtil e de confecções e a questão da inovação”, *BNDES Setorial*, Rio de Janeiro, No. 29, pp. 159-202, mar.
- Godet, M. (1983), *Méthode des Scénarios, Revue futuribles*, No. 71, pp. 110-120.
- Godet, M., Roubelat, F. (1996), *Creating the future: The use and misuse of scenarios, Long Range Planning*, Vol. 29, No. 2, pp. 164-171.
- Instituto Brasileiro de Geografia e Estatística – IBGE (2018), *Séries Históricas*, disponível em: https://ww2.ibge.gov.br/home/estatistica/indicadores/precos/inpc_ipca/defaultserie-sHist.shtm (acesso em 3 out. 2018)
- Instituto de Estudos e Marketing Industrial - IEMI (2016), *Relatório setorial da indústria têxtil brasileira*, São Paulo, Instituto de Estudos de Marketing Industrial, Brasil Têxtil.
- Keller, P.F. (2004), *Competição global & competição local: uma análise das relações interfirmas no cluster têxtil de Americana–SP, Enfoques, Revista Eletrônica dos alunos do PPGSA*, Vol. 3, No. 1, pp. 1-26, mar.
- Marcial, E. C., Grumbach, R. J. S. (2008), *Cenários prospectivos: como construir um futuro melhor*. 5ª ed., FGV, Rio de Janeiro.
- Mendes, S.M.F. (2003), *Filiais brasileiras na rede mundial do setor têxtil: análise de algumas empresas industriais globalizadas a partir da gama de produtos, das etapas produtivas e das funções corporativas*, Relatório de atividades final CNPq, Araraquara.
- Mortiz, G. O., Nuner, R., Pereira, M. F. (2008), *Os métodos de prospecção de cenários e sua aplicação nas organizações: Um estudo de caso no período 1998-2008, FACES R. Adm.*, Vol. 7, No. 2, pp. 68-83.
- Porter, M. E. (1992), *Vantagem Competitiva: criando e sustentando um desempenho superior*, 7. ed., Rio de Janeiro, Campus.
- Rede Brasileira de Centros Internacionais de Negócio (2016), *Estudo mercadológico e Pesquisa de inteligência comercial Setor – Vestuário Relatório Final*, mar., disponível em: http://arquivos.sindicatodaindustria.com.br/app/cni_sindicatos/2011/01/10/123/20160331103835958758a.PDF (acesso em 3 out. 2018).
- Schoemaker, P. J. H. (1995), “Scenario planning: a tool for strategic thinking”, *Sloan Management Review*, Vol. 36, No. 2, pp. 25-40.
- Schwartz, P. (2000), *A arte da visão de longo prazo: planejando o futuro em um mundo de incertezas*, São Paulo, Nova Cultural.
- Serviço Brasileiro de Apoio às Micro e Pequenas Empresas - SEBRAE; Departamento Intersindical de Estatística e Estudos Socioeconômicos – DIEESE (2013), *Anuário do trabalho na micro e pequena empresa*, disponível em: www.sebrae.com.br/Sebrae/Portal%20Sebrae/Anexos/Anuario%20do%20Trabalho%20Na%20Micro%20e%20Pequena%20Empresa_2013.pdf (acesso em 3 out. 2018).

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