

# Marketing internationalization: influence factors on product customization decision

Factors on  
product  
customization

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Ailton Conde Jussani,<sup>a,\*</sup> Eduardo Pinheiro Gondim de Vasconcellos,<sup>a</sup>

James Terence Coulter Wright<sup>a</sup> and

Celso Cláudio de Hildebrand e Grisi<sup>a</sup>

<sup>a</sup>*School of Economics, Business Administration and  
Accounting of the University of São Paulo (FEA/USP), São Paulo/SP, Brazil*

Received 11 July 2017  
Accepted 21 February 2018

## Abstract

**Purpose** – Studies about product customization decision are especially relevant for organizations that decide opening a subsidiary overseas. This scenario requires the company to decide which products should be customized and which products should be standardized when selling products in international markets. The main purpose of this paper is to identify which factors influence the decisions on the customization of industrial products and consumer products to a particular country in the marketing function of a global company.

**Design/methodology/approach** – To do so, a literature review was conducted addressing the following topics: internationalization, international marketing and product customization factors. With regard to methodological aspects, an initial qualitative phase was conducted with four exploratory case studies. In the quantitative phase, an online survey was developed, obtaining 123 records of an intentional non-probabilistic sample.

**Findings** – As a result, six factors were deemed essential to the product customization decision: customers' characteristics, sustainable return on investment, sustainable profit, legal requirements, sales of other products in the portfolio and weather differences.

**Originality/value** – The authors expect that the results of this research contribute academically for the management knowledge about the meanings that product customization can assume in internationalized companies, and, additionally, in a business way, the authors expect that they help companies make strategic decisions on the appropriate measure to take regarding product customization in international markets, whether industrial products or consumer products. With these findings, the authors expect to make a valid contribution about product customization decision and suggesting future studies from other perspectives.

**Keywords** International marketing, Decision-making, Internationalization, Product customization

**Paper type** Research paper



## 1. Introduction and justification

The global environment demands constant change for the companies to operate in different markets. Companies not only need to be aware of competitors' performance, but they need to exceed it, they cannot just retain the older markets and they have to actively seek new

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Since the time of writing this article James Terence Coulter Wright regrettably died.



consumer markets available, new possibilities to increase their profitability and acquire knowledge for innovation (Kiss *et al.*, 2013).

Companies that adopt a global approach become better able to develop products with globally compatible characteristics. A company that leaves product development exclusively to its subsidiaries will ultimately create difficulties for itself in relation to the transfer of the technology developed. Thus, in the global marketing environment, the company needs to adapt its management model to respond to the relevant differences in international markets and extend the knowledge acquired in the subsidiaries, establishing a balance between autonomy and integration.

Therefore, to reap the benefits from a global operation, the company should properly plan the integration of the marketing mix associated with the four basic dimensions of supply in any consumer market: configuration of the product, definition of the sales price, promotion efforts in the local market and the distribution method or place. These dimensions are popularly known as the 4Ps of the marketing function (McCarthy, 1996). Within the perspective of the 4Ps, a critical aspect of the marketing function is the balance between standardization and customization of products in the local market.

From this perspective, certain decisions on customization may improve the net profit from sales in the local market. However, the inappropriate use of customization may reduce overall net profits. By customizing the product above a certain limit, the possibility of using it in other countries is lost, and the cost rises because of the smaller scale of components. On the other hand, by standardizing the product, local opportunities are lost, among other consequences. Currently, internationalized companies face this dilemma. In short, excessive customization may lead to loss of synergies, scale and unnecessary cost increases, and the lack of customization may prevent the acceptance of the product in the target market because of a lack of customer appeal (Keegan, 2013). Between the two extremes, there are many possibilities. Based on an inductive analysis, we will investigate the importance of customizing products when a company decides to sell them in international markets.

As a result of this reflection, the subject of interest of this research is the balance between customization and standardization of products in internationalized companies. Thus, we propose the following objectives:

- identify factors to be considered in the decision on product customization for a given country;
- identify the relative importance of these factors; and
- analyze how the importance of factors differs between B2B and B2C products.

In the products definition, B2B means Business to Business, that is, products manufactured by one company and intended to another company characterized for being an intermediate consumer. In addition, B2C, Business to Consumer, is the product manufactured by a company and intended for the end consumer (Keegan, 2013; Hutt and Speh, 2012).

It is estimated that there is space for companies to operate in new markets not yet explored, leading them to analyze the feasibility of product customization. In the context of B2B marketing and B2C marketing theories, there are important differences, such as the buyer–seller relationship (Hutt and Speh, 2012). In addition, if there are other differences between B2B and B2C, the company should consider different factors depending on the type of product marketed.

With regard to the method, data collection was organized in two phases. Thus, the first phase, qualitative, was characterized by semi-structured interviews with experts, seeking to consolidate the literature review on factors that influence the customization of B2B and B2C

products. The consequence was the improvement of the list of factors. Subsequently, in the second phase, quantitative, the consolidated list of factors of the first phase was used in a survey-type questionnaire. As a result, we obtained an intentional sample of 123 individuals with experience in B2B and B2C product customization. Nonparametric statistics were used for data analysis, which will be discussed later.

We expect that this study, in addition contributing to the literature on business administration, can be a source of information to assist managers in their decisions about standardization strategies and product customization in the international market. The increased volume of world trade, driven by emerging countries (UNCTAD, 2016), makes this study even more relevant. Moreover, there is a lack of empirical studies focused on identifying and prioritizing the factors influencing the decision on customization comparing the two types of products, B2B and B2C, in global markets. Finally, to clarify the scope regarding the theoretical framework of this research, Figure 1 was elaborated.

In this figure, the intersection of the core concepts represents the research objective. Thus, it is a important component of the marketing function: decisions of internationalized companies on product customization for the various countries in which they operate. Next, we will duly detail each of these aspects.

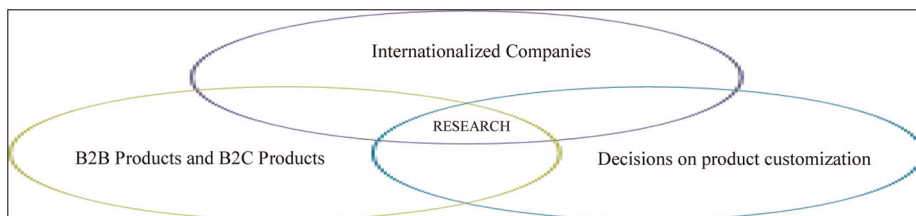
## 2. Theoretical framework

There are many interests that stimulate companies to internationalize. This decision reflects their proactive or reactive positioning when facing macro-environmental changes. Proactive stimuli represent the motivations for attempts to implement strategic changes and imply a greater control of outcomes (Kiss *et al.*, 2013).

Examples of proactive motivations are profits benefits, unique or exclusive products, technological advantage, exclusive information and economies of scale. Reactive motivations appear in companies that, affected by the environment, change their activities over time and often imply a threat bias that leads to a perceived risk greater than the standard. Examples of reactive motivations are competitive pressures, overproduction, decline in domestic sales, idle capacity and saturated domestic markets (Czinkota and Ronkainen, 2012).

Reactive motivations, especially those related to unexpected or unforeseen changes in domestic consumption patterns and industry conditions, imply a reduction of information on foreign markets, which increases uncertainty and anxiety about internationalization and leads to a higher perceived risk than objective standards may indicate. In other words, proactive companies decide to internationalize because they wish to do so. Reactive companies internationalize because they need to do so.

Consequently, companies face a dilemma in the sense that they need to develop global approaches that increase the potential for growth and profit, without ignoring the specifics



**Figure 1.**  
Core concepts and research objective

Source: Prepared by the authors (2018)

of the local approach. For this to happen, huge investments in the development of global programs are required. However, the company may benefit from the level and scope that the presence in multiple markets will provide (Senn *et al.*, 2013).

Although a common set of knowledge and theories applies to both industrial marketing and consumer goods marketing, there are important differences between them, such as: the nature of the markets, the buyer’s behavior and the buyer–seller relationship. According to Hutt and Speh (2012), one of the main differences is the buyer–seller relationship, in general, close and long lasting.

Therefore, the sale does not represent the final result; instead, it will signal the beginning of a relationship. Therefore, the essence of industrial marketing is to build relationships, where companies have to know their customers, how they want to be treated and treat them differently. Swani *et al.* (2014) argue that there are differences in the marketing strategies used in B2B and B2C. Typically, B2C uses social media to increase brand awareness and loyalty, whereas in B2B, companies are hesitant to use this feature. Table I shows the characteristics of these markets.

*2.1 Customization of products in the international market*

Despite the predominance of product standardization, there are differences depending on the product and the place where they are marketed. The need for customization increases as products tend to be consumer and customers have characteristics peculiar to the target market. B2B products require less adjustments than B2C products (Czinkota and Ronkainen, 2012).

As companies gain experience in global markets, the new approach is to ensure the maximum standardization where possible and the necessary customization while offering difference according to the local needs (Jussani and Vasconcellos, 2013).

Thus, among the several factors that influence the decision to customize products, the following factors will be analyzed: legal requirements, sustainable return on investment, sustainable profit, the impact of customization on portfolio sales, consumer’ characteristics and weather differences. These factors will be described below.

In recent years, the number and scope of international environmental agreements have increased as a result of the internationalization of the global environment and the increase of environmental awareness by the population. For the sale of products and services to be possible, they must be in line with the prevailing environmental conditions of the target market. Companies need to manage rules, laws, regulations, policies and social standards involved in the use and/or protection of environmental resources (Novellie *et al.*, 2016).

**Table I.**  
Characteristics of  
customers and  
consumers in the  
B2B and B2C  
markets

#	Industrial market (B2B)	Consumer goods market (B2C)
1	Customers are legal entities	Customers are individuals
2	The individual purchase volume is significant and aims to meet the needs of an entire organization	The customer buys only a few units, usually for his or her own or close people’s consumption
3	The relationship between industrial marketing professionals tends to be close and long lasting	The relationship between retail companies and customers tends to be more impersonal and massified
4	The customers’ purchase decision requires hierarchical approval and numerous departments within the company	The purchase decision is influenced by the consumer’s needs, people close to them, people who are a reference in the product and by the media

**Source:** Adapted from Hutt and Speh (2012), p. 18

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International rules and standards also affect the choice of a country for the installation of a subsidiary. This influences the actions of national political players, especially government officials and groups of interest of society, who can make changes in laws and regulations to achieve their goals at the national level (Cortell and Davis, 1996).

Also in the context of international marketing, the primary element that motivates standardization in all markets is cost, such as economy of scale in R&D (Keegan, 2013). Companies seek to achieve a sustainable return on investment, that is, a viable product customization requires a percentage of return, in cash, on the initial investment in production, sales and other costs.

For example, wholesalers (B2B) and retailers (B2C) establish a percentage margin on sales – large enough to cover the estimated operating costs and taxes on the capital invested – plus the desired profit. An integrated global marketing strategy can reduce global costs in many ways. For example, the company can increase the benefits of economies of scale by grouping production, or other activities, in two or more countries. Alternatively, the firm could transfer its manufacturing process to low-cost production countries (Yip, 1989; Senn *et al.*, 2013).

Also, one should consider that the differences between markets in terms of structure for production and distribution show variations between countries. Even when these countries have a similar economic situation, there is a need for adaptations in the product, its packaging, price and in the distribution method. This allows us to argue that standardization will lead to a potential reduction in profitability (Samiee and Roth, 1992).

Customizing products, despite being the option that best meets the customers' needs and respects their cultural differences, will only be maintained if it is capable of generating sustainable profit. Therefore, opting for product customization will be economically viable only when the return is greater than the return that the company is able to achieve in other investments, that is, opportunity costs (Ross *et al.*, 2012).

It should be noted that the ultimate goal of the company is not to reduce costs through standardization, but rather to achieve long-term profitability through sales resulting from different consumer needs (Rao-Nicholson and Khan, 2017). For Davcik and Sharma (2015), lower costs resulting from standardization are not the main objective of companies, but rather increase the profitability and competitiveness of the company.

To keep a sustainable profit, companies need to offer advantages in their portfolio that contribute to the increase in sales volume. The impact on portfolio sales factor can be understood as an additional sale that will create the opportunity to offer more products. The company can make certain changes in the product standards to create new business opportunities and gain more competitive advantages (Keegan, 2013). For example, in B2B products, instead of purchasing only a thermostatic valve to control engine temperature, the automaker could purchase the whole system to which the valve is coupled (Jussani and Vasconcellos, 2013).

Some companies adopt a proactive market orientation and focus on meeting the latent needs of customers, but these needs are not always expressed, and therefore, companies explore innovative opportunities more proactively than their competitors (Cai *et al.*, 2015).

The strength of the multinational company's brand can also impact portfolio sales, as it influences the customers' purchase option. Global brand products can be found by customers in many countries around the world. These companies have a centralized marketing coordination where professionals analyze how cultural and socioeconomic characteristics affect brand image performance in the target market (Steenkamp *et al.*, 2003).

Although the brand informs consumers of its global positioning, its portfolio may require a certain degree of customization. Decisions on the customization of consumer products are

directly affected by the consumer characteristics, that is, their behavior, taste, attitudes and local traditions, for example. Despite the growing trends of globalization, variations between countries are still significant, in terms of consumer needs, purchasing power, commercial infrastructure, culture, traditions and technological development (Davvetas and Diamantopoulos, 2016).

Still on the context of consumer characteristics, Thompson and Chmura (2015) state that there is a myopia in marketing that sees reality in an excessively simplified way. For example, the international company needs to make sure that the products respect religious or social customs. Today, customers can no longer be considered members of a homogeneous market group and this fact shows that the concept of market needs to be redefined as customization becomes more common. Many consumers face challenges in designing products that fit their personal needs. This leads companies to create interfaces with users to support them in the purchase decision (Thompson and Chmura, 2015; Schnurr and Scholl-Grissemann, 2015).

Differences between markets occur not only in terms of customs but also in relation to the availability of means of transportation, facilities, refrigeration and storage. In addition, differences in the way products are used often require adjustments in the shape of the product, packaging, price and distribution (Krajicek, 2016).

It is common for companies to begin their internationalization process in countries with greater geographic proximity, where environmental and cultural diversity is lower. This is known as psychological distance, and it contributes to a lower need for product customization (Czinkota and Ronkainen, 2012). However, Davvetas and Diamantopoulos (2016) state that product customization is formed largely at the product category level. The authors advocate the use of category-specific strategies in the global and local brand management.

Weather differences may also influence the product customization design. For example, mild temperatures may lead to a higher consumption of chocolate and ice cream (Czinkota and Ronkainen, 2012). A study conducted by Murray *et al.* (2010) showed that there is a relationship between temperature and consumer spending, which can be justified by the fact that the weather influences customers' behavior and mood, leading them to change their consumption habits. The sales volume of clothing and footwear tends to increase in the winter, whereas in the summer, the consumption of food and beverages increases (Roslow *et al.*, 2000). Coca-Cola developed selling machines that automatically change the price of soft drink based on changes in ambient temperature (Holt *et al.*, 2004).

### 3. Research methodology

The research was conducted in two phases. The first phase, qualitative, was used to identify factors that influence the decision on product customization for a given country. The second phase, quantitative, was used to identify the relative importance of these factors and to analyze how the importance of the factors differs between B2B and B2C products.

The first phase involved a multiple case study in foreign multinational companies that have a subsidiary in Brazil for at least 10 years, which indicates that the company dominates aspects related to international markets. These characteristics indicate a certain degree of complexity in the target market and are related to the process of internationalization of the company. Companies surveyed Tetra Pak and Bristol Myers-Squibb (B2B products); and Nestlé Health Science and Johnson and Johnson (B2C products).

This multiple case study, based on interviews with experts, consolidated the review of factors that influence the customization of industrial and consumer products identified in the theoretical framework. The result of the interviews was the improvement of the list of

product customization factors, that is, the qualitative phase was essential in identifying the customization factors for both types of products.

The second phase, quantitative-exploratory, was conducted through a survey-type electronic questionnaire available on the Web, to collect data about the characteristics and opinions of a certain group of people (Fowler, 2013). Thus, the instrument was divided into three sections. The first section contained questions about the type of product: B2B, B2C or services. The second section was related to decisions on product customization. The third section included questions about demographic and financial information of the respondent and the company.

Before the final application of the instrument, a pretest was carried out with 11 executives, whose areas of expertise and technical knowledge are related to the topic of product customization. Thus, it was possible to identify and correct failures in the instrument (Cooper and Schindler, 2013).

For the development of the theoretical model, the MDPO approach, method for delineating problems in the organization (Rubenstein, 1976), was used as reference. The MDPO allows us to organize, in a diagram, independent, dependent and moderator variable definitions (Figure 2).

A crucial aspect of the MDPO is the formulation of propositions drawn from the literature and from other sources, which can be replicated (Rubenstein, 1976). Thus, the MDPO begins with the definition of the desired effects resulting from the core objective. In this research, we want a scale of importance of the factors that influence the decision on product customization, that is, dependent variable (C). If the scale is elaborated, it can help prioritizing the factors in the decision on customization. Subsequently, a list of factors that can be manipulated or chosen is prepared. In this study, six factors deemed important by the authors, that is, independent variable (F), were chosen from among dozens of customization factors, consulted in the literature review. Finally, the parameters or conditions that cannot be altered were identified. In this research, the parameter, that is, the moderator variable (G), is the type of product: B2B and B2C – without considering services, for example. Within the context of the use of the MDPO, it was possible to establish the theoretical model of the research.

As an important consequence of the use of the MDPO, to elaborate the theoretical model, the research does not present the hypotheses, focusing on the variables of Figure 2, with the purpose of being tested empirically (Cooper and Schindler, 2013). Table II shows the list of

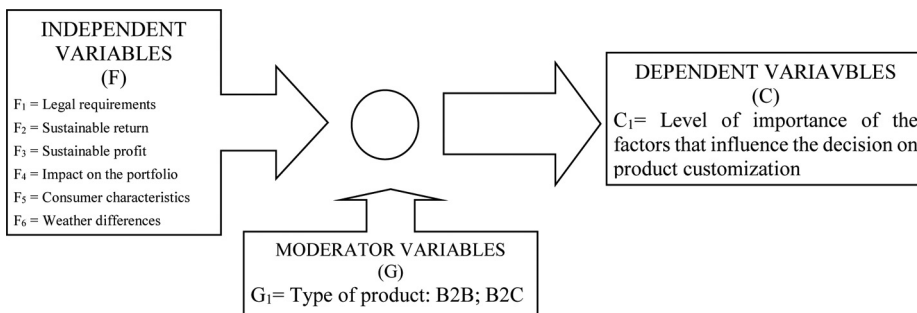


Figure 2. Research model

Source: Prepared by the authors (2018)

Category of the variable	Variable	Description	Author
Dependent (C)	Degree of importance of customization factors	Level of importance of product customization factors	–
Independent (F)	Legal requirements	International markets have their own rules, regulations and laws that establish the conditions and specifications for products to be legally marketed	Czinkota and Ronkainen (2012), Cortell and Davis (1996), Novellie <i>et al.</i> (2016)
	Sustainable return on investment	The cost of product customization for different markets should generate financial results that exceed the initial investment in production, sales and other costs	Keegan (2013), Senn <i>et al.</i> (2013), Samiee and Roth (1992), Rao-Nicholson and Khan (2017)
	Sustainable profit	Product customization is feasible when the economic profitability is greater than the one that the company can achieve with the same degree of risk in other investments	Ross <i>et al.</i> (2012), Davcik and Sharma (2015), Rao-Nicholson and Khan (2017)
	Impact of customization on portfolio sales	The supply of differentiated products whose value is perceived by the customer creates opportunities to increase the company's sales volume	Keegan (2013), Steenkamp <i>et al.</i> (2003), Cai <i>et al.</i> (2015)
	Consumer characteristics	Product customization is affected by the behavior, taste, attitudes and traditions of the target market: B2B (intermediate consumer) and B2C (final consumer)	Czinkota and Ronkainen (2012), Schnurr and Scholl-Grissemann (2015), Thompson and Chmura (2015), Davvetas and Diamantopoulos (2016)
	Weather differences	Different temperatures stimulate the consumption of certain products. In the winter, the consumption of clothing and footwear increases. In summer, the consumption of food and beverage increases	Czinkota and Ronkainen (2012), Roslow <i>et al.</i> (2000), Murray <i>et al.</i> (2010)
Moderator (G)	Type of product	Industrial product (B2B) Consumer product (B2C)	

**Source:** Prepared by the authors, (2018)

**Table II.**  
List of variables of the research

variables, which were prepared based on the literature review and the qualitative phase, based on multiple cases, as already mentioned.

### 3.1 Sampling plan and general profile of respondents

The sample used in this research is intentional and non-probabilistic by convenience. Therefore, this is a sample selected following the evaluation criteria that identify representative elements. For being a non-probabilistic sample, the size was dimensioned so as to enable the use of nonparametric statistical techniques.



Approximately 5,000 respondents were invited by e-mail to access the questionnaire on the Web page of the survey (QUESTIONPRO, 2013). We eliminated 117 records whose answer was “No” to the qualifying question: “Have you ever directly participated in the decision making on product customization?”. As a result, 123 valid records for the analysis of B2C and B2B products were used. It is known that the chances of obtaining results in line with reality increase considerably between 100 and 300 observations (Anderson *et al.*, 2014). It can be deduced that the number of observations collected is consistent with the research conducted.

As for the general profile of the sample in relation to their position, we noticed a large number of directors (29.27 per cent) and managers (28.46 per cent). These two positions account for more than half of the sample of 123 respondents (57.73 per cent). The other respondents, that is, 42.27 per cent were distributed as follows: president or CEO (4.06 per cent), managing partner (17.07 per cent) and others (21.14 per cent). A similar comment applies in the analysis of B2B products, in which 31.15 per cent are directors, 31.15 per cent are managers, 3.28 per cent are presidents or CEOs, 18.03 per cent are managing partners and 16.39 per cent others. For B2C products, 27.42 per cent are directors, 25.81 per cent are managers, 4.84 per cent are presidents or CEOs, 16.13 per cent are managing partners and 25.8 per cent others. Thus, large part of the sample holds positions that are directly related to decision-making in the company's routine, and there is a consistency between the respondents' position and their period of experience in the position, that is, 47.97 per cent of respondents have more than 10 years of experience in the position. By considering professionals with more than six years in the position, the result corresponds to 73.17 per cent of the sample.

Finally, the sectors of activity, related to the sample, were adapted from the Research on Technological Innovation, PINTEC, carried out by the Brazilian Institute of Geography and Statistics (IBGE, 2013). The list of sectors of activity is as follows: appliances and electrical materials, automotive, beauty and personal care, packaging and paper, communication equipment, pharmaceutical and pharmaco-chemical, machinery and equipment, furniture, parts and accessories for vehicles, food products, electronic and optical products, non-metallic mineral products, chemical products, textiles and services. For the variable sector of activity of the company, the automotive sector (9.84 per cent) for B2B products and the food products sector (8.06 per cent) for B2C products stand out.

### *3.2 Reliability of the data collection instrument*

The Statistical Package for the Social Sciences (SPSS, 2009) was used to perform the statistical treatment of the information collected. This software allowed us to elaborate different data analyses, from descriptive measures to reliability and normality tests of the sample.

Before the statistical tests were applied, we obtained the Cronbach's  $\alpha$  (alpha) coefficient, which measures the internal consistency of the survey instrument. This coefficient shows whether the proportion of the variability in the answers results from some kind of inconsistency of the questionnaire, which may lead to different interpretations and cause bias in the data collected. In short, the test checks whether the differences in the answers are because of the fact that the respondents have different opinions rather than because of different interpretations of the instrument.

The coefficient is considered appropriate from 0.70 (Cronbach, 1951), although a value higher than 0.60 is considered acceptable (Nunnally, 1978). Based on these parameters, in the sample of 123 records, we obtained Cronbach's  $\alpha = 0.75$ . If we consider only 62 records of

B2B products, Cronbach's  $\alpha = 0.80$ . For the 61 records of B2C products, Cronbach's  $\alpha = 0.66$ . In view of the results presented, the instrument is reliable.

3.3 Sample normality test

Before analyzing the results, the Kolmogorov–Smirnov (K-S) test (SPSS, 2009) was applied to check whether the sample is a normal distribution. Based on the 123 records, Table III shows the result of the K-S test related to the six variables of the research.

Once the K-S test and  $p$ -value (significance level  $\alpha = 0.05$ ) were obtained for each of the variables, the results are analyzed with the aid of the  $p$ -value column. The level of significance is defined as:  $\alpha = 0.05$ . According to Table III, if  $p$ -value  $< \alpha$ , then the distribution of the variable differs from the normal distribution. According to the result obtained in the K-S test, we conclude that the sample has no normal distribution.

4. Analysis of results

The analysis is structured according to aspects that should be taken into account in the decision on product customization for the Brazilian market, restricted to sectors from the 123 records of the sample.

4.1 Level of importance of product customization factors

A six-position agreement Likert-type scale was used: (T)otally disagree = 1, (M)ostly disagree = 2, (S)lightly disagree = 3, (S)lightly agree = 4, (M)ostly agree = 5 and (T)otally agree = 6. This scale of forced choice requires that most participants have a definite position on the subject. In this circumstance, it is reasonable to force respondents to turn their attention to the alternatives rather than choose the central position (Cooper and Schindler, 2013).

To elaborate the scale of importance, the following answers were considered: “totally agree” and “mostly agree”. We decided to eliminate the “slightly agree” answer because it is close to “slightly disagree”. Thus, by adding the percentage values of the two answers, we obtained Table IV, elaborated in descending order of importance.

The first factor of the ranking “legal requirements” stands as fundamental because if the customization fails to take into account these restrictions, the product cannot be sold in the target country. This makes sense because there will be no profit if there is no market to be explored (Ghoshal and Bartlett, 1990). In addition, as noted by Novellie *et al.* (2016), companies need to be aware of the legislation related to the use and protection of environmental resources. The importance of the factor was already clear in the qualitative phase, according to Cortell and Davis (1996). For example, to obtain authorizations to sell

Product customization factors	K-S test		Coefficient	
	K-S	$p$ -value	Asymmetry	Kurtosis
Legal requirements	4.979	0.000	-3.319	14.900
Sustainable return on investment	2.864	0.000	-1.641	3.570
Expected sustainable profit	3.190	0.000	-1.401	2.659
Increase in sales of other products	2.715	0.000	-1.220	2.840
Consumer characteristics	3.103	0.000	-1.553	3.585
Weather differences of the target market	2.341	0.000	-1.031	1.158

Table III.  
K-S test for a sample  
of 123 records

Source: Data obtained by the authors using the SPSS 18 software, (2013)

legally customized products, the analyzed companies (Tetra Pak, Bristol Myers-Squibb, Nestlé Health Science and Johnson and Johnson) followed Agência Nacional de Vigilância Sanitária standards, the National Health Surveillance Agency.

The following factor “consumer characteristics” is second in the ranking because once the obstacles posed by legislation have been overcome, it will be necessary to understand the consumer preferences and trends in the country of origin. According to several authors (Thompson and Chmura, 2015; Schnurr and Scholl-Grissemann, 2015), there are consumers who need products that resemble and adapt to their personal needs. Therefore, the customization will be as adequate as possible, following the preferences of the local market, and the ease of access to distribution channels that may impact on global standardization (Hutt and Speh, 2012).

The third factor “sustainable return on investment” has proved to be more important than the immediately subsequent factor “expected sustainable profit”. It can be inferred that the company understands that product customization for different markets should generate financial results that exceed the initial investment in production, sales and other customization costs. This argument suggests that the company is able to increase the benefits of economies of scale by grouping production or transferring production to low-cost countries (Senn *et al.*, 2013). Therefore, the sustainable profit would be a consequence of sustainable return.

The fifth factor pointed out by the respondents, “increase in the sale of other products”, is deemed important but has a marginal effect on the decision to customize when compared to the previous factors. It is considered that this factor was in the fifth position because it is understood that the customization of the target product should present satisfactory and acceptable results in a way that justifies its permanence in the country. It is worth noting that margin losses may occur at the beginning of product customization in the target market, but in the long term, portfolio sales may increase in relation to international agreements between global suppliers and the company that customizes the product. Therefore, once the target product has achieved the expected results, a new strategy for other products in the portfolio would be developed. Within this context, Cai *et al.* (2015) state that some companies adopt a proactive market orientation and focus on meeting the potential needs of customers.

Finally, “differences in the weather of the target market” ranked sixth, and this result can be inferred as a factor related to the type of product customized. The sample failed to capture the sectors that consider weather as an important factor for customization. However, food companies that use strict logistics to deliver perishable products may consider this factor as important (Roslow *et al.*, 2000). It should be noted that, in the qualitative phase, the company in the food sector Tetra Pak classified this factor as little important. The

B2B/B2C ranking	Importance of product customization factors	Agree (%) (M) + (T)
1st	Legal requirements	93.50
2nd	Consumer characteristics	82.11
3rd	Sustainable return on investment	78.86
4th	Expected sustainable profit	70.73
5th	Increase in sales of other products	68.30
6th	Weather differences of the target market	67.48

**Source:** Data obtained by the authors using the SPSS 18 software, (2013)

**Table IV.**  
B2B + B2C ranking

respondents reported that a delicate product such as milk – packed in aseptic packaging – can be transported at low cost and with guaranteed quality to consumers and places previously out of reach. Hot and humid weathers are no longer obstacles. Essentially, in Brazil, for this study, we have not verified the relationship proposed by Murray *et al.* (2010) between temperature and consumer (B2C) or customer (B2B) spending, which may be justified by the fact that weather influences customer’s behavior and mood.

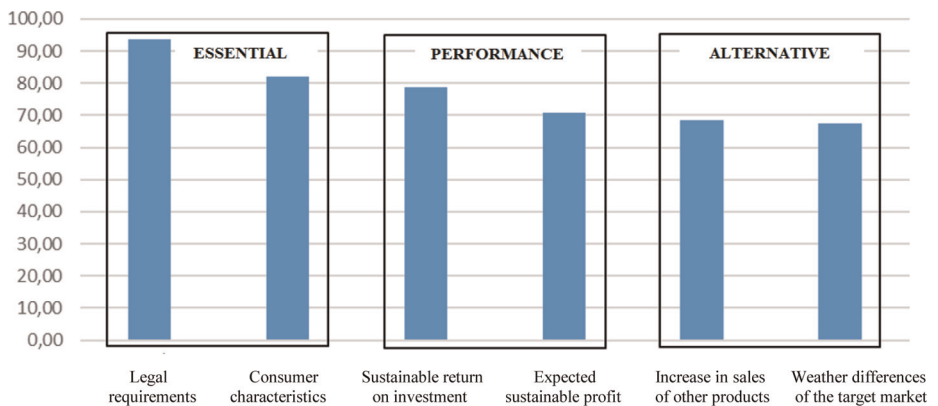
In another context of analysis, by organizing the information resulting from the factors into a graph, we obtained Figure 3. Thus, it can be seen that there are three groups of factors associated by the proximity of the percentage values, classified as follows:

- (1) essential factors (legal requirements and consumer characteristics);
- (2) performance factors (sustainable return on investment and expected sustainable profit); and
- (3) alternative factors (increase in the sale of other products and differences in the weather of the target market).

It is understood that the essential factors must be customized, because if the guidelines of product customization are not considered, the company will be totally committed to the intentions of internationalization (Jussani and Vasconcelos, 2013). Once the essential factors are consolidated, the company drives its efforts toward the performance factors. In other words, the company will be concerned with the factors associated with economic and financial indicators to make sure that the operation in the target market will be within the company’s strategy (Hill, 2014; Cai *et al.*, 2015).

At this point, it should be noted that the Nestlé Health Science and Tetra Pak cases illustrate well the performance factors. These companies managed to customize the products without adversely affecting the quality and functionality in relation to the same products in the parent company.

Finally, the alternative factors can be customized according to the physical or geographical characteristics of the country as proposed by Murray *et al.* (2010). From this perspective, we have presented considerations previously. This reflection, resulting from Figure 3, should be taken into account when thinking about customizing products in the target market with the possibility of satisfactory results.



**Figure 3.**  
B2B + B2C ranking  
and group of factors

**Source:** Data obtained by the authors from the SPSS18 software (2013)

4.2 Differences between product customization factors of Business to Business and Business to Consumer products

We prepared one ranking for the product customization factors of B2B products and one for the product customization factors of B2C products. In addition, two nonparametric tests were used: Mann–Whitney and classification tree by the *Chi-squared Automatic Interaction Detection* method (CHAID). These tests seek to identify the differences in the customization factors between B2B and B2C products.

First, we extracted 61 valid sample records, for the B2B product type. The same criterion used for the preparation of the general ranking was adopted in this analysis. To elaborate the scale of importance of B2B products, the following answers were considered: “totally agree” and “mostly agree”. By consolidating the percentage values of the two answers, we obtained the left side of **Table V**, in descending order of importance.

Likewise, the same procedure was performed for the 62 valid sample records for the B2C product type. The same criterion used for the preparation of the general ranking was adopted in this analysis. To elaborate the scale of importance of B2C products, the following answers were considered: “totally agree” and “mostly agree”. By consolidating the percentage values of the two answers, we obtained the right side of **Table V**, in descending order of importance. **Table V** makes it possible to make a comparison between the two types of products in relation to the degree of importance of the factors that influence the decision to customize them.

By comparing the first three factors of **Table V**, in both columns, we see a reversal of the position between “consumer characteristics” and “sustainable return on investment” between B2B and B2C. It is known that the factor “legal requirements” should be considered as the first, because if the company fails to comply with the laws and regulations of the country, it will not be able to market the products in the target market.

However, for B2B products, the factor “sustainable return on investment” is more important than “consumer characteristics” because it will define the profit margin required for the company to stay in the target market (Hutt and Speh, 2012; Rao-Nicholson and Khan, 2017). As for B2C products, the “consumer characteristics” factor is more critical because the company depends on the acceptance of the product by the final consumer to establish itself in the target market. It is only after the product is approved by the final consumers that the company turns its attention to the return on investment (Czinkota and Ronkainen, 2012). Thus, it can be seen that the profile of the final consumer is more critical in B2C products in relation to the profile of the intermediary consumer, that is, the profile of the buyer’s company, in B2B products.

By comparing the classification on the left side of **Table V** (B2B ranking) with that obtained in **Table IV** (B2B + B2C ranking), it is noted that only the first and last factor are

Agree (%) (M) + (T) Ranking B2B products	#	Ranking B2C products	Agree (%) (M) + (T)
96.72	Legal requirements	1 <sup>st</sup> Legal requirements	90.32
81.96	Consumer characteristics	2 <sup>nd</sup> Consumer characteristics	85.49
78.68	Sustainable return on investment	3 <sup>rd</sup> Sustainable return on investment	75.81
75.41	Expected sustainable profit	4 <sup>th</sup> Expected sustainable profit	72.58
68.86	Increase in sales of other products	5 <sup>th</sup> Increase in sales of other products	66.13
68.85	Weather differences of the target market	6 <sup>th</sup> Weather differences of the target market	61.29

**Table V.**  
Importance of customization factors by type of product

**Source:** Data obtained by the authors using the SPSS 18 software, (2013)

aligned in both classifications. It is concluded that the general ranking is not strongly related to the importance of the customization factors of B2B products.

By comparing the classification on the right side of Table V with that obtained in Table IV, it can be seen that the first four factors are aligned in both classifications. In other words, the ranking of B2C products is virtually equal to the general ranking. From this perspective, it can be said that the general ranking is directly related to the importance of the customization factors in B2C products.

It is concluded that the order of importance of the customization factors differs between the types of products. Thus, based on the data presented, it is possible to infer that a general classification for both types of products is unlikely to occur. Therefore, the findings of the research can be understood as: factors that most impact the decision on product customization in a given country (Hill, 2014).

It can be seen that the sample of both types of product has a large number of economic sectors. One can explain the difference in the classification of both types of product by this argument. After all, each economic sector of both B2B and B2C products has particularities that must be taken into account in the decision on product customization (Hutt and Speh, 2012).

However, there is a positive convergence regarding the factors presented to the respondents. If, on the one hand, there was no general classification for both types of product, on the other hand, the vast majority of answers ranged from “mostly agree” to “totally agree”. If the factors chosen were not in line with the importance for customization, the dominant answers would be “totally disagree” and “mostly disagree”. By applying the Mann–Whitney test (SPSS, 2009), in the 123 records, for the customization factors by type of product, we come up with Table VI.

“Consumer characteristics” is the only factor that has statistical significance ( $p$ -value = 0.031), considering  $\alpha = 5$  per cent. This means that there are differences in five factors of the research, but they do not cause significant differences in opinion. However, the factor “consumer characteristics” (B2C) or “customer characteristics” (B2B) may generate crucial differences of opinion among respondents, that is, it can be inferred that, according to Thompson and Chmura (2015), the concept of consumer (B2C) or customer (B2B) forms different groups and thus tends to diverge in the research.

In view of this argument, for example, for B2B customers, legal entities, the decision to buy requires hierarchical approval and numerous departments within the company (Swani *et al.*, 2014; Hutt and Speh, 2012). On the other hand, for B2C consumers, individuals, the decision to buy is influenced by personal needs, people close to them or people who are a reference in the product (Davvetas and Diamantopoulos, 2016; Czinkota and Ronkainen, 2012). In addition, it can be seen that B2C consumers tend to buy fewer units and use them for their own consumption. In contrast, for B2B customers, the volume of purchases is

Product customization factors	Mann–Whitney $U$	$p$ -value
Legal requirements	1,725.000	0.245
Sustainable return on investment	1,745.500	0.431
Expected sustainable profit	1,686.000	0.267
Increase in sales of other products	1,726.000	0.376
Consumer characteristics	1,500.000	0.031
Weather differences of the target market	1,686.500	0.278

**Source:** Data obtained by the authors using the SPSS 18 software, (2013)

**Table VI.**  
Mann–Whitney test  
for the variable type  
of product

significant and, in general, aims to meet the needs of the company as a whole (Hutt and Speh, 2012).

In fact, Table V shows evidence of these arguments. Taking into account the “mostly agree” and “totally agree” answers, it was found that for the factor “consumer characteristics”, the B2B product (78.68 per cent) had a lower agreement compared to the B2C product (85.49 per cent). In summary, statistically, the opinion among the respondents of both types of product was different. Also in Table V, there were divergent opinions regarding the order of importance of the consumer characteristics factor (Hutt and Speh, 2012; Czinkota and Ronkainen, 2012).

Johnson & Johnson (B2C) and Bristol-Myers Squibb (B2B) cases are worth considering to corroborate the results of the survey on consumer characteristics. It can be seen that for the B2C product, mouthwash, the company launched a new option with a mild flavor, for consumers who prefer to use it without alcohol in the composition. Conversely, for the B2B product – a drug with active principle that treats the symptoms of moderate rheumatoid arthritis – it is assumed that the physician will be responsible for choosing the product, as he is the professional who is technically competent to make the decision. Thus, if through objective criteria the physician recognizes the advantages and benefits of the drug, then it will be prescribed for the treatment of the patient, and there will be a tendency of absorption of the product by other patients.

To confirm the findings of the Mann–Whitney test, a second statistical test was performed: the classification tree test according to the CHAID method (SPSS, 2009). In this process, we choose the independent variable (type of product), which has the strongest interaction with the dependent variables (the six factors of importance in the customization decision). The tree resembles a regression: the classification is based on the independent variable. After processing the variables, the result is the information shown in Figure 4.

The first node (Node 0) shows the variable “type of product” and the respective categories: industrial product B2B (49.6 per cent) and consumer product B2C (50.4 per cent). The classification tree found a single significant association between the independent

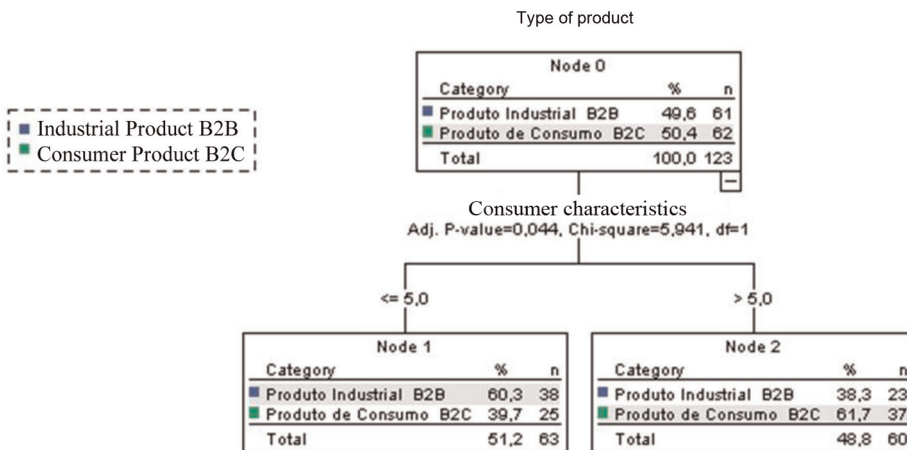


Figure 4. Classification tree according to the CHAID method

Source: Data obtained by the authors using the SPSS 18 software, (2013)

variables: consumer characteristics ( $p$ -value = 0.044 and  $\chi^2 = 5.941$ ). Thus, as found in the Mann–Whitney test, the  $p$ -value of this factor is below 5 per cent.

It is possible to see the details of this divergence from the child nodes (Node 1 and Node 2) in Figure 4. It can be seen in Node 1 answers that had the degree of agreement below or equal to 5, that is, from: totally disagree = 1 to: mostly agree = 5. We obtained 63 records (38 B2B and 25 B2C). The type of product that reached the highest frequency was the B2B with 38 records or 60.3 per cent of the sample of 61 records.

As for Node 2, we can see answers that had the degree of agreement above 5, that is, totally agree = 6. We obtained 60 records (23 B2B and 37 B2C). The type of product that reached the highest frequency was the B2C with 37 records or 61.7 per cent of the sample of 62 records.

Having shown the details of the analysis of the tree and how the consumer characteristics factor was obtained as the only significant difference between the two types of products, we can proceed to the last stage of the classification tree. From this perspective, Table VII shows an analysis of the assertiveness of the classification tree, that is, the reliability of the results found for the consumer characteristics factor.

The interpretation of the information in the table shows that of the 61 records obtained as industrial product, 38 records were correctly classified as industrial product and 23 records were erroneously classified as consumer product. Therefore, the correct classification of B2B records was 62.3 per cent.

Likewise, of the 62 records obtained as consumer product, 37 records were correctly classified as consumer product and 25 records were erroneously classified as industrial product. Therefore, 59.7 per cent of B2C records were correctly classified. It can be said that the reliability of the classification tree test was 61.0 per cent. In view of the analysis presented for the sample, the results obtained in this method are acceptable.

Therefore, in the variable “consumer characteristics”, the values of the levels of significance, both in the Mann–Whitney test and in the classification tree, converge into results, that is, it was shown that the variable “consumer characteristics” indicates significant differences between B2B and B2C (Hutt and Speh, 2012), confirmed by the statistical analysis.

It is understood that product customization, B2B and B2C, is characterized as strategic, as it reflects decisions whose results will have long-term consequences and which involve a high cost of reversibility. Thus, products resulting from customization must reflect the core competencies of the organization that are critical to meeting the needs of current and potential customers. Furthermore, the more demanding the customers, the greater the customization. Therefore, to maintain product superiority, that is, image and quality, companies need to invest in R&D for new products, as well as in manufacturing methods (Czinkota and Ronkainen, 2012).

**Table VII.**  
Assertiveness of the classification tree for the variable type of product

Values found	Correct classification (%)	Expected values	
		Industrial product	Consumer product
Total	61.0		
Industrial product	62.3	38	23
Consumer product	59.7	25	37

**Source:** Data obtained by the authors using the SPSS18 software, (2013)



To clarify this statement, the product Tetra Brik® Aseptic 1000 *Mid FlexiCap*, produced by B2B customers, is an example. However, the final destination of the product is B2C consumers who perceive the company Tetra Pak as responsible for the product. This consideration is necessary because this factor is related to both the B2B and B2C customer, with respect to the image and quality of the product.

Thus, decisions on product customization are affected by the behavior, taste and local traditions, that is, when purchasing the Tetra Brik® Aseptic 1000 *Mid FlexiCap* packaging, consumers do notice the intuitive and convenient closure. Consumer wants the cap to close the product and not just to open it. They expect to hear the “click” sound, a characteristic noise produced by the packaging, which indicates that it is safely closed when storing it in the refrigerator.

The variable “consumer characteristics” is one of the main aspects in the decision for customization in this B2B product, as it determines the acceptance of the product by the B2C consumer, reflected in the sales in the local market. In summary, we found the following advantages: B2C consumer: easy to open with cap in a family-sized packaging, B2B customer: competitive cost of the system with cap injection, low amount of raw material and better pallet stacking.

This reflection corroborates the statement of [Thompson and Chmura \(2015\)](#) that customers form different groups and, therefore, the market concept needs to be adjusted to successfully accommodate product customization.

Moreover, as a result of the changes in the market concept, companies develop different communication strategies with the users to support them in the purchase decision ([Schnurr and Scholl-Grissemann, 2015](#)). For example, B2C uses social media to increase brand awareness, whereas in B2B, companies resist using this resource ([Swani et al., 2014](#)). Within this context, the type of consumer shows the importance of how communication should be handled when customizing for B2B customers. In the case of B2C consumers, the use of social media results in successful communication. Therefore, the variable “consumer characteristics” has crucial divergences of opinion among respondents.

## 5. Final considerations

The purpose of the analysis presented was to obtain evidence and answers for the identification of the factors that influence the decisions on the customization of industrial products and consumer products for a given country in an internationalized company. Based on the literature, we defined the factors that influence the decision on product customization. They are legal requirements, sustainable return on investment from the product customization, expected sustainable profit resulting from product customization, impact of product customization on portfolio sales, product customization resulting from consumer (B2C)/customer (B2B) characteristics and differences in the weather of the target market.

We developed a conceptual model based on these factors – qualitatively tested in four internationalized companies. To substantiate the factors quantitatively, a survey was elaborated, applied to a sample of experts on the subject of product customization. The MDPO approach was adopted as a reference ([Rubenstein, 1976](#)). As a result of these two methods, we sought to make it clear that there are no simple formulas or generic solutions for the customization of B2B and B2C products.

The minimum customization will achieve gains of scale and cost reduction. However, it will fail to meet the customer (B2B) or consumer (B2C) in details deemed decisive for the acceptance of the product in the target market. In addition, it will lose development initiatives by the subsidiary ([Keegan, 2013](#); [Senn et al., 2013](#)). The total customization will achieve wide acceptance of the product by customers/consumers. However, production

could become unfeasible because of the high costs to meet specific technical details in the target market. Add to this argument the loss of synergies and the opportunity to market the product in new international markets (Hutt and Speh, 2012; Czinkota and Ronkainen, 2012).

Therefore, between these two points of the product customization scale, there are numerous possibilities. The authors, through the research, could see that the customization solutions need to be found for each situation. Thus, it was possible to directly elaborate three types of classification: a general classification for both types of products, (Table IV) a classification for B2B products and a classification for B2C products (Table V). Note that for B2C products, the classification indicated the first four factors in line with the general classification.

Tests were adopted to ensure the statistical significance of the sample and to identify the important factors for the two types of products. The Mann–Whitney test revealed that the factor consumer/customer characteristics is the only factor that has divergent opinions about the concept of consumer and customer in both types of product. It was found that a possible cause is the formation of different groups with different characteristics. For example, the concept of consumer considers the predominance of impersonal relationships (Thompson and Chmura, 2015; Davvetas and Diamantopoulos, 2016), whereas the concept of customer is based on professional relationships (Swani *et al.*, 2014; Hutt and Speh, 2012). The CHAID classification tree test confirmed the Mann–Whitney test.

Within the findings external to the objectives, it is worth noting that the variable sector of activity accounted for 30.08 per cent of the answers for the option services (SPSS, 2009). Therefore, it was found that respondents' activities are in sectors with high incidence of services.

In summary, with the research results, we expect to contribute academically and in a business way to the administration field. The academic contribution to the literature on business administration is the new elements for the discussion related to the balance between customization and standardization of products in internationalized companies. As business-related contributions are the suggestions for companies that internationalize in markets with significant differences in relation to the parent company's market. Based on the discussion of the research findings, the companies will be able to find some guidance on what to do first in the process of customization. In other words, the research suggests using the six factors presented to customize products in the international market. The company that uses them will have a great chance of solving some of the customization problems. However, the results found should be considered according to the following limitations.

The statistical validity of the sample does not allow an inference about the universe and the risk of subjectivity is inherent to this type of research. As for the qualitative aspect, the research shows a small magnification of the results for a larger universe of companies. Finally, among the various suggestions for future studies, we highlight the application of the model in factors associated with the B2B and B2C product value chain, with a cross-referencing of the literature and the development of hypotheses to be tested and a quantitative study. We also recommend a research to verify customization factors in hybrid products, that is, a *continuum* between tangible and intangible. The study and the breakdown of these suggestions deserve further investigation, aiming to improve the concept of factors involving the decision on product customization.

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**\*Corresponding author**

Ailton Conde Jussani can be contacted at: [ailtoncj@usp.br](mailto:ailtoncj@usp.br)