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Attitudes and buying behavior in a Business-to-Business model

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Abstract

In the context of marketing business-to-business (B2B), how business relationships are established defines the behaviour of the parties involved, and is heavily influenced by corporate interests of each part. The purchase decision process is shorter and simpler, and the purchase has a strong emotional component. Analyse and understand the process of purchasing decisions of customers or consumers allows the development of specific actions to increase the degree of response and influence on the decision. In general, the decision process of organizational buyers is complex, organized and long, and is influenced by a diverse set of players.

This article focuses on the decision to include slab joist ("*vigotas*") in construction projects and presents the main results of a survey implemented by the key decision-makers (engineers, architects and builders). Statistical analysis of responses indicates the presence of conditioning factors such as price and technical maturity of the solution slab joist.

The results can be used to develop a new positioning in the market of the product offering and new communication strategies.

Keywords: marketing, business-to-business, buying behavior, survey, attitudes.

1 Marketing Business-to-Business

The marketing concept involves the choice of potential customers, and the management of the marketing mix. This concept encompasses three key ideas: 1) the marketing manager should focus its activity in creating satisfaction for the customer, 2) the organization must have a structure operating as an integrated system where all employees and functional areas are perfectly identified with their role in the organization and relationship with customers, and 3) the goals of medium-and long-term organization (e.g. profit, environmental and social responsibility, the image on the market) must be satisfied (Jalkala, Cova, Salle & Salminen, 2010). By integrating all functions of the organization, marketing aimed at meeting customers and their needs, providing solutions and communicating them to a target market segment properly identified and defined (Brettel, Strese & Flatten, 2012).

Throughout this article, the perspective of B2B marketing will be used. Although B2B marketing is often referred to as industrial marketing or organizational marketing, it can be said that there are significant differences between these three designations. The organizational marketing studies all types of interactions and transactions between all types of organizations. The industrial marketing, nomenclature increasingly used, based his philosophy on the relationship between business organizations in a productive context. The B2B marketing studies the trade relations between the organizations that seek profits, where the definition of an interpersonal relationship is very important for sharing motivations (Ivens, Pardo & Tunisini, 2009).

According to Watkins and Hill (2009), B2B marketing presents four specific dimensions:

- Functional interdependence. The efficiency of B2B requires a close relationship and interaction of marketing with all functional areas of the organization (R&D, logistics, engineering, etc.).

- Complexity of the product. In B2B context, product development process will have to rely on productive interactions between the organization and its customers in order to develop innovative and appropriate.
- Relationship of interdependence between buyer and seller. To ensure mutual benefit in this relationship is necessary to ensure a strong commitment of organizational resources (human, material and financial) in a medium and long term prospective.
- Purchasing process complex. In organizational buying, there is a set of principles that can increase or decrease the complexity of the process. B2B marketing is characterized by requiring a detailed evaluation and proximity to customers, thereby increasing the level of complexity.

The traditional view of markets considers that the demand is made up of independent buyers and sellers, *i.e.*, each exchange carried out among these is interpreted as a series of discrete transactions where the seller was the active part and the buyer is limited to respond to stimuli. According to some authors, this type of transaction does not match what was and is observed in the industrial market, where both parts seek to develop long term relationships, on an current basis and integrated with other networks (Hakansson & Snehota, 2000).

In B2B markets, the alternatives available for partners are fewer. Since the customer base is more volatile, the subjectivity of choice is significant. In addition, an evaluation at an early stage is difficult, and it is important to define relationships that involve a real commitment from both parts, because the markets are characterized by the conquest of power, domination and control of close relationships (Golfetto & Gibbert, 2006). It is possible to assess that in B2B marketing the approach adopted corresponds to a perspective of social relations, which includes the analysis of relational variables, such as reciprocity and exchange of information, and the analysis of complex relationships in networks (Jarratt & Fayed, 2001).

The approach of the relationship marketing focuses on the effective analysis of the relationship, trying to avoid the theoretical generalizations (Woodside, 1997). It considers the relationships that are created between the different types of partnerships, which, by definition, are few and difficult to replace. In the relational marketing perspective, a model based on cooperation and bilateral relations between the seller and the consumer interprets reality better than the traditional approach, which considers the sellers and consumers as "adversaries" (Donaldson & O'Toole, 2000).

2 Consumer behaviour

The study of consumer behaviour "is the study of the processes involved when an individual or a group, select, purchase, use or remove products, services, ideas or experiences to satisfy needs and desires" (Solomon *et al* 1999, p. 8). Consumer behaviour is a new field of marketing, with some interdisciplinary contributions, as is the case of sociology and psychology. Several investigations have as dominant a positivistic perspective, characterized by an emphasis on the consumer as a rational decision maker to which should please. The motivations of the consumer are often driven by values or principles, which constitute a system of values.

The study of consumer behaviour seeks to understand how people, groups and organizations select, buy, use and reject products, services, ideas and experiences in order to meet their needs and wants (Golfetto & Gibbert, 2006). The buying decision process is the specific study of the selection and the purchase of products and services. Analyse and understand the process of purchasing decisions of customers allows any organization to develop actions that have the purpose to improve their sales volume.

The attitude is a disposition favourable or unfavourable to a particular object, to some people, an event, or for certain attributes. Indirect measures of attitude are an opportunity for respondents to analyse or review different aspects of a particular theme. The answers given to a particular set of specific questions are used to infer the provision in respect to the subject under investigation (Ajzen, 1996).

How do you measure the attitude? Despite the fact that the attitude is not measurable, Ajzen (1996) suggests a mathematical equation for his quantification. The final result of the attitude (A) is obtained by multiplying each attribute depending on the responses to each question:

$$A = \sum b_i e_i$$

Equation 1: Calculation of the attitude

The attitude is thus perceived as a set of feelings that can be positive or negative about something. It is always stronger, if subject to a constant enhancement over time.

For the analysis and study of attitudes is possible to determine the tastes and desires of consumers (Ajzen, 1996). But a product or service may be composed of many attributes or qualities, which can lead to a greater difficulty degree in its analysis. Depending on the individual making the assessment, some aspects may be more relevant or not. Additionally, the individual attitude can be affected by external factors, such as family approval. Thus, different models of attitude have been developed to try to specify the elements that together can give a more accurate assessment of individual attitude on a particular theme or subject. These models used by researchers seeking to analyse and study the attitudes are basically specified by three elements (Solomon *et al* 1999):

- Attributes - the relevant characteristics can be identified, and the investigator may include attributes that an individual considers relevant to the assessment.
- Beliefs – the specific cognitions about a specific attitude that measure the level of perception that the consumer has towards a particular brand or attribute.
- Importance - reflects the priority that an individual gives to a particular product. An attribute can be taken from a set of attributes, with some more important than others, and the specific weight of each vary from individual to individual.

The theory of planned behaviour (Ajzen, 1996) proposes an explanatory model of individual human action, particularly in terms of the intent of a particular action and how it is realized in an effective decision. The behaviour is rooted in the beliefs generated by the evaluation of the outcome of the behaviour, the subjective norms, the normative beliefs and motivation for action. The questions that comprise the indirect measures of attitude, subjective norms and perceived control can be decomposed in the following level of analysis:

ATTITUDE	**SUBJECTIVE NORMS**	**PERCEIVED CONTROL**
BEHAVIORAL BELIEFS	NORMATIVE BELIEFS	CONTROL BELIEFS
OUTCOME EVALUATIONS	MOTIVATION TO COMPLY	POWER OF CONTROL FACTORS

Table 1: Indirect Measures

The theory of planned behaviour has more than two decades of use and there are several scientific studies that have used this model successfully. This theory has been mainly used in research in the areas of psychology and analysis of individual behaviour. However, its structure is rather theoretical adaptable, in particular by adding new variables.

3 Methodology and sample

This work is part of a research project that seeks an answer to the question: "What explains the decision to include slab joist ("*vigotas*") in construction projects?" in a context of purchasing and decision-level business-to-business. The method of collection chosen was the questionnaire, and its starting point was a review of the literature, where we tried to systematize the information through survey questions already been developed and used in previous studies. In the first part, the questionnaire collects some aspects relevant to characterize the study population, particularly in terms of general information of the

respondent and the respondent's company. Finally, here is a second part with specific questions regarding attitudes and perceptions.

Upon completion of a satisfactory version of the questionnaire, and prior to its implementation, a pre-test was performed in order to ensure that the expectations in terms of research information were to get hit.

The population defined for the purposes of this research includes the actors in the construction industry who have power or capacity to decide on buying organization, including architects, civil engineers and contractors (builders). Given the exploratory nature of the study, participants received the questionnaire referred to in person or via email (on average, the time taken between the delivery and return of completed questionnaires was about two days). A sample of "convenience", with a total of 54 valid responses, was admitted.

This study is based on a Portuguese sample which is mostly composed of civil engineers (53.7%) or architects (27.8%), male (83.3%) with qualifications or bachelor's degree (81.5%). Have an average experience about 10 years old (9.98 years) with a standard deviation of 10.464 years and a median of six years of experience. The average age of respondents is 35.09 years, with a standard deviation of 11.117 years and a median of 31.5 years.

The organizational characterization of companies where respondents play roles, 64.8% of respondents play a role in companies whose main activity is the construction and 35.2% work in architecture, consultancy or project.

With regard to company size by number of employees, it is interesting to note that 29.6% of respondents work in a company with maximum of 9 employees (micro) and 27.8% did not know or does not respond ("Ns / Nr ") on this issue. In turn, the age of the company was only indicated by 27 respondents, which indicate that play roles in companies with an average age of 19.41 years with a standard deviation of 12.404 years and a median of 15 years (indicating a minimum of 3 years and a maximum of 55 years).

4 Results

This article focuses on responses to questions related to indirect measurements on the elements of the theory of planned behaviour: attitude, subjective norms and perceived control. In addition to descriptive statistics, whenever possible we test hypotheses of independence between the response to a given question and the answer to questions of social characterization of the respondent as the function role, experience, gender, academic qualification, and characterization of the company in terms of size and activity. For methodological issues associated with the statistical analysis of contingency tables, variables with response options unrepresentative are transformed to minimize observed frequencies equal to zero and consequent increases in inappropriate test statistic calculated in chi-square test. The following is a brief presentation of the main results.

4.1 Behavioural beliefs and outcome evaluations

The first items examined reflect the beliefs about the likely outcomes of the behaviour of use the slab joist on the construction project. In general, association with certain attributes forms the behaviour beliefs. In the particular case of the inclusion of joist slab, we chose to focus the study on the attributes of price, performance, acceptability and comparative advantage. In this sense, literature scales review allows us to define five statements related to behavioural beliefs adapted to the behaviour of the inclusion of joist slab. The degree of agreement with each statement was measured on a Likert scale with five levels varying from 1 - "strongly disagree" to 5 - "strongly agree" (see Figure 1).

The figure summarizes the positive responses, *i.e.*, the sum of answers 4 - "agree" and 5 - "strongly agree". The statement concerning the cost of the slab joist presents more concordant respondents (85.19%) then the statement on the robustness of the final use of the joist (70.37%). The information that has a lower percentage of positive responses (50%) is related to the superiority of the advantages of using

slab joist in relation to its disadvantages (in this statement, 22.2% of respondents indicated "neither agree nor disagree").

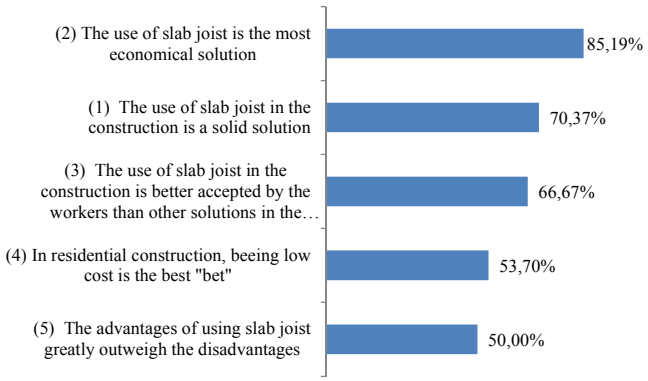

Figure 1 Behavioral Beliefs (% positive responses)

There was a relationship of dependency between the response to the statement "the use of slab joist is the most economical solution" and the respondent's gender (chi-square significance level of 10%). Interesting to note the dependency relationships found between firm size and 1) the degree of agreement with the superiority of the advantages of using slab joist and 2) a commitment to building low cost (chi-square significance level of 10 %).

With regard to commitment on low-cost building should be noted:

- They are small companies that agree with the statement (85.71%) followed by micro enterprises (56.25%).
- The group that disagrees is the medium-sized enterprises, with 44.44% of negative responses. Interestingly, this group also has 44.44% of positive responses.
- The answers of respondents from large companies do not indicate negative opinion about the statement but have a significant neutral opinion (57.14%).

In addition to the definition of the various attributes associated with a particular behaviour, the attitude results from the perception that the action in question will produce the defined attributes. The outcome evaluation intends to determine the subjective probability that the individual scores in relation to a driving behaviour with a particular attribute. Thus, adapting items identified in the literature, we defined five outcome measures in the use of slab joist in construction. The degree of perceived benefit of each of the statements was measured in a Likert scale with five levels ranging from 1 - "totally disadvantageous" to 5 - "totally worthwhile" (see Figure 2).

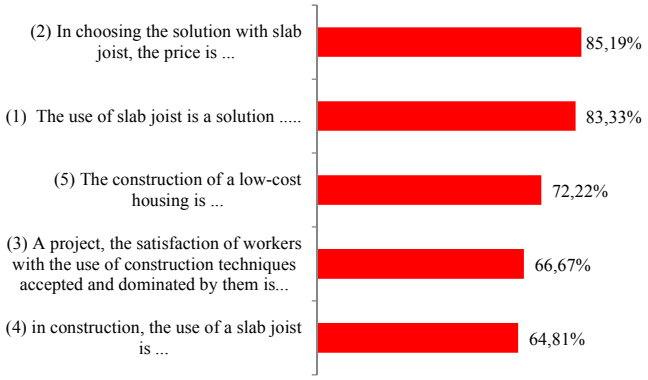

Figure 2: Outcome evaluation (% positive responses)

There is the expressiveness of positive responses to five statements, with percentages varying between 64.81% and 85.19%. Results suggest highly sensitive to the price of slab joist (85.19%) and high recognition of the advantage of this construction solution (83.33%).

Dependency relationships were found (chi-square significance level of 5%) between:

- The perceived advantage of the use of slab joist and the company's size.
- The perceived advantage of low cost construction and the company's activity.
- The perceived advantage of low cost construction and the gender of the respondent.

The group with higher levels of perceived advantage is the small business respondents (85.71% of positive responses). The neutral group is significant in the response of the respondents from large companies (71.43% of answers "neither advantageous nor disadvantageous"). In turn, and in relation to gender and its relationship with the construction of low cost, the group of male respondents perceives the biggest advantage (77.78% of positive responses).

4.2 Normative beliefs and motivation to comply

The subjective norms reflect the perception of influence or pressure from others to perform or not a particular behaviour. Subjective norms, such as attitudes, are also a function of beliefs regarding the approval or disapproval of the implementation of a behaviour. These beliefs are termed normative beliefs. Based on the adaptation of items identified in the literature, we defined three normative beliefs in the use of slab joist in construction, considering the influence of industry and workers. Semantic scales were used to seven levels (-3 to 3). Figure 3 identifies the beliefs and considered adjectives, as well as the distribution of responses obtained.

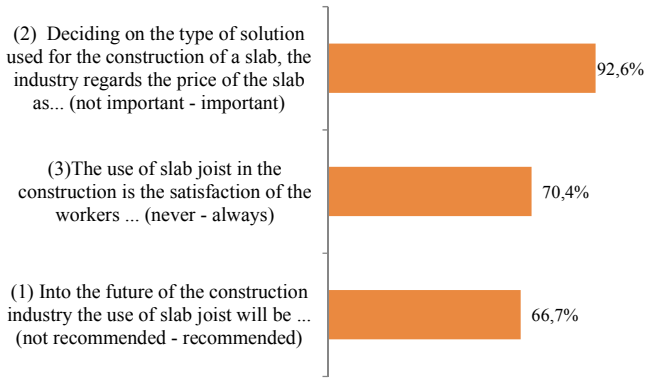

Figure 3: Normative Beliefs (% positive responses)

Looking at the positive responses (+1 - "slightly positive" +2 - "almost positive" and +3 - "extremely positive"), responses highlight the importance of the price of the slab joist (92.6% of positive responses, see Figure 24). The following are in descending order: the influence of the workers in the use of slab joist (70.4%) and counselling for future use (66.6%).

Found dependency relationships between: (a) the importance of the price of the slab joist and the academic qualification and function role of the responder (significance level 5% and 1%, respectively), (2) the influence of the use of workers in the slab joist and the gender, function role of the respondent, size and activity of the company (significance level of 1%, 5% and 5%, respectively).

The influence of referents is analysed through the motivation to comply. Based on the adaptation of items identified in the literature, we defined three levels of motivation to comply considering the influence of industry and workers. Semantic scales were used with seven levels (-3 to 3) (see Figure 4).

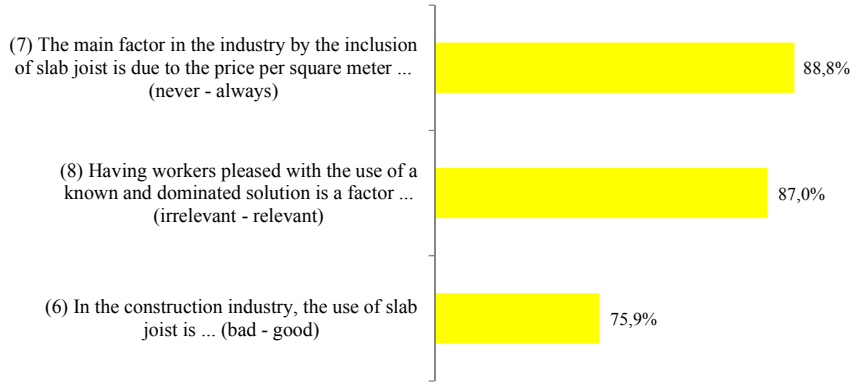

Figure 4: Motivation to comply (% positive responses)

In general, we identify into the distribution of responses, high levels of motivation to comply. Looking at the positive responses (+1 - "slightly positive", +2 - "almost positive", and +3 - "extremely positive"), there is, in descending order, the influence of price (88.8%), the relevance of workers (87.0%) and the slab joist as good practice in the industry (75.9%).

At the level of motivation to comply, we found statistically significant relationships of dependence between the variable that reflects the relevance and appeal to workers and the (1) gender of the respondent, (2) experience of the respondent and (3) firm size (respectively 5%, 10% and 1% significance level). The relevance of the industry's choice of a known and implemented solution, and the respondent's qualifications are also statistically dependent (significance level of 1%).

4.3 Control beliefs and power of control factors

In the theory of planned behaviour, the behaviour is assumed as a function of salient information or beliefs relevant to the behaviour. The perceived control results from the control beliefs. The adaptation of items identified in the literature, allowed to define three normative beliefs in the use of slab joist in construction: technological developments, price developments and the reputation of the solution. Semantic scales were used with seven levels (-3 to 3) (see Figure 5).

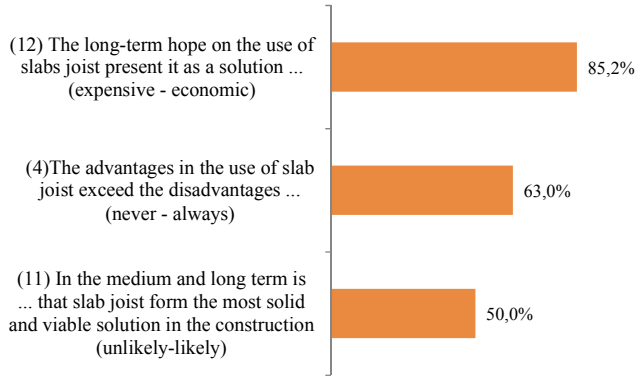

Figure 5: Control Beliefs (% positive responses)

The analysis of positive responses (+1"slightly positive", +2"almost positive" and +3"extremely positive") results in a higher percentage of positive responses to price (85.2%) and reputation (63.0%). Technological change has only 50% of positive responses concerning the premise that in the medium and long term this solution is the most solid and viable solution.

After recoding the responses into positive or not positive responses, statistically significant relationships of dependence were found between: (1) technological change and firm size (significance level of 5%), (2) changes in the price and gender of the respondent and activity of the company (significance level of 10% in both).

In addition to the control beliefs, perceived control also requires recognition of the power of control factors. Following the strategy of adaptation of scales tested in the literature, we consider three levels of power control defined on the basis of price and reputation of slab joist. Semantic scales were used with seven levels (-3 to 3) (see Figure 6).

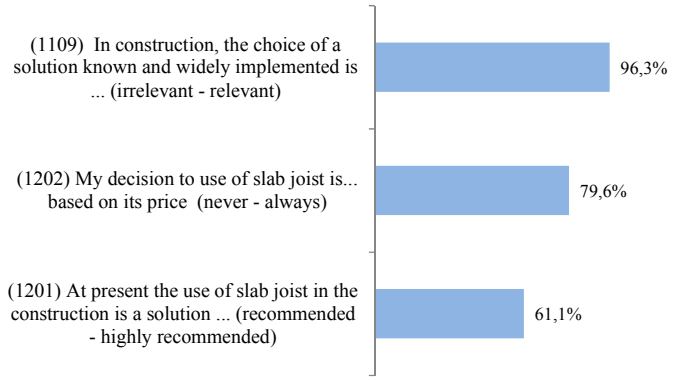

Figure 6 - Power of control factors (distribution of responses)

Results identify the choice of a solution widely implemented as an important and significant perceived high (96.3%). It follows the decision based on price (79.6%) and the recommendation of slab joist solution (61.1%).

In terms of dependency relations, the tests found only the existence of a statistically significant dependence between "the importance of choosing a solution widely implemented" and the respondent's qualifications (chi-square significance level of 1%).

5 Conclusions

Understanding what explains the purpose of purchasing, and how this is realized in actual purchase, can be used to develop a new positioning of the product offering in the market and new communication strategies. The B2B marketing includes situations where individuals or groups buy products or services for resale, for use in the production of other goods and daily operations of a company (Plank, 1997). It can be argued that B2B marketing contributes to a better functioning of the economy, acting as a kind of "economic engine", although it is often associated with the establishment of contacts between the sporadic and impersonal organizations (Jaakkola, Möller, Parvinen, Evanschitzky & Mühlbacher, 2010). That is, the transactions involve the establishment of inter-relationships between people who belong to these organizations. On the other hand, these people have different motivations and experiences.

In terms of indirect measures considered in this study for attitude, subjective norms and perceived control, the results of the most significant level of responses are:

- The high price sensitivity of the slab joist;
- The high recognition of the advantage of the slab joist solution;
- The perception of the importance of employee satisfaction with the chosen solution;
- The perceived importance of choosing a solution widely implemented.

Given the results, it is suggested a careful analysis of price and technical advantage of the solution slab joist, since the slab joist is perceived as a low cost solution. However, it is recognized that in today's market, where the low purchasing power inhibits the adoption of more expensive and techniques evolved, the slab joist solution may have a strong business opportunity.

Regarding attitudes, the effort to influence a decision should consider the personal evaluation by the decision maker for the product: the more positive is the personal opinion regarding the product, less

effort will be necessary to perform in order to convince the decision maker to take action. The results presented require greater analysis. In terms of further work, it is provided to test the theory of planned behaviour, as well as the further replication of the study in a sample of greater size.

The difficulties were related to the lack of studies at the organizational level of the theory of planned behaviour. It took an in-depth study of theory, with strong definition to the level of psychology, a completely new and different to the basic training of the researcher in engineering and industrial management. The task of adapting the questions to the subject and the variables under study also proved a challenge because of its nature and specificity.

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