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DESIGN COMO ESTRATÉGIA DE COMPETITIVIDADE PARA INTERNACIONALIZAÇÃO

DESIGN AS A COMPETITIVENESS STRATEGY FOR INTERNATIONALIZATION

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Abstract

This article presents a study on the role of design as a competitive element relevant for innovation in companies with a potential for internationalization, in Brazil and Latin America, as well as for the promotion of national and regional design. The subject is approached through a systematic review of the literature (SR) and an exploratory study of the Brazilian program Design Export. The SR was conducted to understand the state of the art of the topic. In the selected publications, the design was a major factor in differentiating companies and products from their competitors, in terms of innovation and competitiveness in the foreign market. The exploratory study proved to be relevant to the understanding of public policies for the promotion of design and to grasp the practical experience on this subject on a national level. By understanding the mistakes and successes of the program, its key challenges, and opportunities for improvement, it was possible to compare the findings with the results of SR and other surveyed literature. We conclude with suggestions and proposals for ways to promote design for the internationalization and competitiveness of the Brazilian industry, and international dialogue with Latin American countries.

Keywords: Design, Innovation, Brazilian Industry, Export

1 Introduction

The present article proposes reflections about innovation, design, and technology as important elements in a company's potential to be successful in its internationalization process, when entering new, relatively unknown, and challenging markets. Also, this study traces a parallel with the history of design in Latin America and evaluates the approach, notions, and explorations of design by Latin American countries. Despite the wide dissemination of design in Brazil and other Latin American countries, as a strategic subject over the last twenty years, a misconception remains about its purely aesthetic function, particularly in certain sectors of industry. However, especially in the case of export companies in the region, design plays a fundamental role as a catalyst for innovation, since it is related to the configuration of material culture, artifacts, and communication that constitute the identity of Latin American products and contribute to the growth of the so-called emerging economies.

Based on a systematic review of the literature (SR) and an exploratory study about the Design Export (DEX) program — a project of the Brazilian Agency for the Promotion of Exports and Investments (Apex-Brasil), coordinated by Centro Brasil Design (CBD) —, the research presented here seeks to understand experiences in which design was a key factor for the differentiation of companies and the internationalization of businesses. This differentiation and degree of innovation may be recognized and etched out with the intervention of design, since "design-driven innovation has been recognized as one of the most important bases of competitiveness in the modern knowledge economy." (Qiu, Kollmann-Cano, and Mudambi, 2017, p. 544).

NOver the last decades, according to data published by the Industrial, Technological and Foreign Trade Policy (PITCE) of the Ministry of Development, Industry and Foreign Trade from 2004, an urgent need has become evident for the objectives of strengthening and expanding Brazil's industrial base, optimizing the capacity for innovation of companies, as well as the increase in production and export of products with a greater aggregate value (Fonseca, Heemann, Brum, and Castro, 2016). This scenario is also applicable to other Latin American countries, such as Argentina, Colombia, Chile, Mexico, and Uruguay (Fernández and Bonsiepe, 2008).

Among the existing definitions for the theme "innovation", the typology from the Manual of Oslo, developed by the Organization for Economic Cooperation and Development (OECD), is the most recurring one in the literature and proposes four different kinds of innovation: organizational, of a product, of a process and marketing (OECD, Eurostat, Finep, 1997). According to Molina, Castro and Barrera (2017), when an economy seeks innovation as a foundation, it can be directed to reach great competitive advantages because a foundation based on innovation prepares the country to predict and implement changes in its complex organizational and economic structure, or because it increases its capacity to have an impact on the growth of exports. For these authors, a characteristic that differentiates developed countries from developing countries is constant innovation. Companies are increasingly challenged by the increase in competition which, at present, occurs on a global scale. Technology contributes to reducing borders and favors global exchanges as much as partnerships between organizations and companies of various countries. In this context, design can identify resources, choose approaches or aspects to optimize the perception of a product or service in the market, and improve its presentation, highlighting its qualities and contributing to a better market flow, sales and profit. Furthermore, by mapping out and designing strategies for the establishment and recognition of companies in the foreign market, it favors the export of its products.

1.1 Design and Internationalization: the Brazilian Scenario

In emerging countries, as is the case with Brazil, there is still a long way to reach the level of developed countries in terms of innovation and the use of technology and design by companies. Over the last years, some actions were carried out to introduce design into the Brazilian productive sector. This effort becomes more evident starting with the creation of the Brazilian Design Program (PBD), by the then Ministry of Development, Industry and Foreign Trade (MDIC), through the 9 of November 1985 decree, which defines that: "design's inclusion into Brazil's public development policies has been made official". When it was founded, over twenty-five years ago, the need for Brazilian businessmen to be motivated to understand and use the pair design and innovation in the productive system was already being pointed out (Fonseca, Heemann, Brum, and Castro, 2016, p. 1746, our translation).

Among the few current initiatives in the country to promote the connection between design and manufacturing, we selected the program Design Export (DEX) for an exploratory study, intending to understand the Brazilian experience with programs to foster design for innovation and competitiveness in the export industry. The systematic review of the literature revealed the lack of scientific production about design as a determining factor for competitiveness aimed at exports, which today is one of the indexes with the lowest competitive performance for Brazil's manufacturing in the global innovation ranking (Cornell University, INSEAD, and WIPO, 2020).

The Strategic Manufacturing Map CNI 2018-2022, developed by CNI (National Manufacturing Confederation), points out the slowdown of the national manufacturing sector due to economic and institutional crises, and how the country lost competitiveness concerning countries with similar structures or to those with which it directly competes on the international market. In this scenario, the document also stresses that "Brazilian industrial production dropped to the levels of 2004 and the country has accumulated almost a lost decade." (CNI, 2018, p.18, our translation). An important element presented in the document is the selection of eleven key factors that are considered strategic for CNI. Among them, one item highlights the need to increase productivity and innovation in companies, so that an intensification in these two areas may spur an increase in competitiveness and access to the international market.

To facilitate an analysis of the scenario for innovation in Brazil, comparing it to other economies, the publication Global Innovation Index 2020 was used. The report systematically examined innovation in 130 countries and presented them in the form of a ranking, which takes into consideration the innovation capacity and results in each country. In this edition, the fundamental question under debate is regarding the sources of funding to create an ecosystem to foster innovation. The authors underscore the need for debate around public policies that stimulate the development of innovative practices so that the involvement of the State makes itself necessary to varying degrees (Cornell University, INSEAD, and WIPO, 2020, p. 13). In 2020, according to the last published report, Brazil held the position of 62nd in the ranking. In the categories "institutions", "sophistication of the market" and "creative products" (intangible assets; creative goods and services; online creativity), the country was evaluated as below average. In a more detailed diagnosis, the report pointed out that some of the factors that negatively affected innovation in Brazil included: lack of incentive to start a business, infrastructure in general, and difficulty of accessing credit.

2 Methodology

The study presented here proposes a qualitative approach, working with a systematic review of the literature in search of a picture of the current moment and the academic production around the topic of design as a competitiveness factor, as well as a recognition study of the DEX program. The study carried out interviews with different players of the program and analyzed reports and other documents from three existing editions offered by the program's organization.

2.1 Systematic Review of the Literature (SR)

The SR aimed to draw an overview of the theme addressed in the research, searching for topics related to design, innovation, internationalization, exports, investments in design and innovation in small and medium enterprises (SMEs), the international market, and strategic approaches to innovation and design, according to the search protocol, as per Table 1.

Databases	Web of Science; Scopus
Types of Documents	Articles
Period	2010-2020
Language	Portuguese, English and Spanish
Location of Terms	Topic: Title, summary, subject and/or keywords
Thematic areas	Applied Social Sciences; Engineering; Economy, Others
Keywords	Design; Innovation; Competitiveness; exports; internationalization
Criteria for Inclusion	Contents pertaining to the issue of the internationalization of products using design as a tool for competitiveness
Criteria for Exclusion	Contents that do not contribute with data and reflections that are relevant to the internationalization of products using design as a tool for competitiveness, or duplicated studies.

Table 1: Structure of protocol used to carry out SR. Source: the authors, 2020.

2.2 Design Export Program (DEX)

After evaluating the available program reports and documents, the key players were identified and organized into four big groups, classified in the following way: companies, entities, design firms, and consultants. With the players mapped out, interviews were planned with specific questionnaires for each one of the four profiles. To analyze the experience and history of DEX in-depth, the phase of data collection involved carrying out seventeen semi-structured interviews with representatives of four different kinds of players who participated in the program in its three editions. They were divided in the following way: seven companies serviced by DEX; four design studios hired by the program; three consultants who participated in these editions; two interviews with representatives of the Apex-Brasil management; and one interview with managers of the Centro Brasil Design.

To collect participant data, semi-structured in-depth interview techniques were used, adopting different scripts according to the interviewed public and permitting a deeper vision of the interviewees' experience. At the end of the interviews, transcripts were examined, and the information was grouped into fifteen categories. Thus, data was structured into a wide visual map with the key passages from the answers. This mapping out used visual codes to identify which group of interviewees each content belonged to.

3 Results

3.1 Systematic Review

The search revealed 773 scientific articles in the database, from which 41 were selected to have their summaries and contents analyzed, and finally, 12 were chosen for filing. Different visions related to globalization, manufacturing, technology, technological improvement, governmental support, the economy, and changes were observed in this review, in various countries and different cultures.

The internationalization and opening to the foreign market created a wide range of opportunities and increased the possibilities for the development of new products and services, adding aggregate value to local manufacturing. However, they have an impact on "building capacity and focusing on differentiation processes, it is the right way to reap the benefits and guarantee long-term growth of exports." (Vernon, 1966 apud Molina, Castro, and Barrera, 2017, p. 266, our translation). Cavalheiro and Brandão (2017) highlighted that, despite their being delays in terms of innovation and technology, emerging countries, such as those that are

part of the BRICS, have robust and complex manufacturing, especially, for example, in the production of footwear, a segment in which Brazil was the fourth biggest producer in the world in 2014.

In his research about Latin American companies that export intensive knowledge services, Niembro (2017) highlights the existence of indicators that point to the connection between the services trade and manufacturing. Over the last decades, the internationalization of companies and their structures generated a new phenomenon, in which the market could make choices according to the advantages of each region. With this, he highlights that "manifestations of these processes are the outsourcing and/or offshoring of different activities of goods and services for those providers and/or regions that present more advantages in their production."[1]

3.2 International Competitiveness

International competitiveness is an important topic for formulators of public policies, managers, and academics. The definitions of competitiveness in the sphere of industries and companies are similar, and generally speaking, encompass the capacity of a business to produce and sell products and services of superior quality, with lower costs and a greater degree of innovation in the face of local and international competitors, to satisfy the wishes and needs of all parts involved, including shareholders, suppliers, workers, and clients (Liu, 2017).

Through an academic study carried out in Oman, a country of the Arabic peninsula with an economy that is essentially based on oil exploitation, it was verified that a strategic organizational project, directed or characterized by the creation of an ecosystem of innovation, can help promote innovation in emerging markets and the expansion and internationalization of its businesses (Arshi and Burns, 2019). Dobni, Klassen, and Nelson (2015, apud Arshi and Burns, 2019) argue that innovation strategies must help foster development in the entire organization and be a strategic priority.

3.3 Internationalization of SMEs

The growing number of companies that over the last years decided to internationalize have drawn the interest of academic studies about how international expansion affects the performance of businesses. When implementing a strategy of expansion into international markets, these organizations seek various competitive advantages, such as economy of scale, a greater economic offer, the acquisition of strategic assets, and the transfer of prices that generate fiscal benefits, among others (Manotas and Gonzalez-Perez, 2020).

Export companies can also benefit in terms of productivity and innovation in other ways related to learning because of their exports. First, the increase of competitors in foreign markets forces them to improve their products and remain competitive. The more active companies are in foreign markets, the greater the probability of competing with other exporters and global multinationals, which are consistently more efficient and productive than the companies that only operate in domestic markets (Helpman, 2004 apud Manotas and Gonzalez-Perez, 2020). To conclude, by increasing their degree of internationalization, these companies can reap benefits through market searches, economies of scale, and the benefits of a learning experience (Contractor, 2012; Lu and Beamish, 2004 apud Manotas and Gonzalez-Perez, 2020). Several published studies have found a positive, linear relationship between internationalization and business' performance.

Other studies have also recognized the importance of SMEs for the economic development of the economy in their respective country. These companies are responsible for a considerable share of the economic growth and the creation of new jobs in countries of emerging economies. Also, various studies recognize the development of the internationalization of SMEs as a fundamental strategy to attain national development and the competitiveness of emerging markets. The literature about international markets and international entrepreneurship also considers internationalization a decisive source of growth and increase in the performance of businesses (Lu and Beamish, 2001 apud Manotas and Gonzalez-Perez, 2020).

3.4 Government Support

Safari and Saleh (2020) state that various factors play a positive role in terms of the internationalization of SMEs, such as market globalization, government support, recent changes in the global economy, technological optimizations and improvements, initiatives to foster and open up the market and trade, as well job creation and the recovery of the economy. Pino Felzensztein, Zwerg-Villegas e Arias-Bolzmann (2016) suggest that the implementation of a public strategy with adequate design to foster entrepreneurship and business innovation, aimed at developing countries, instead of the adoption of policies used in developed countries, may signify a substantial increase in the growth rates in the so-called emerging economies — the term adopted by the authors — of South American countries and Latin America as a whole. The level of innovation and incentives for innovation and internationalization varies a lot between developing and developed countries. In Colombia,

for example, there is an effort on the part of the government to consolidate relationships with historical commercial partners, such as Chile, Peru, and the United States, accompanying the increased opening of the country to the international market (Molina, Castro and Barrera, 2017).

3.5 Design Export Program (DEX)

DEX was created in 2012, conceived by Apex-Brazil in partnership with the Centro Brasil Design (CBD), and under its coordination and developed methodology. The program selects industries that are interested in carrying out design projects (product or packaging), intending to internationalize its sales, connecting them to a network of more than one hundred and twenty Brazilian design firms to develop projects. To do this, it offers a base subsidy of 18,000 reais as an incentive for the start of the project, and it is the task of the companies, according to the complexity of their challenges, to invest an additional amount to make the project viable. The entire process is mediated by a consultant (who is subsidized by the program) that does the design management along with the company. Projects follow the Design in Practice methodology, by the CBD, that contributes to the creation of an organizational culture of innovation, design, and export. The consultant acts from the understanding of the challenge, identifying opportunities for innovation, drafting the project's briefing, and analyzing the firms' proposals to develop the project. In the three editions carried out until 2020, the program has served, in the entire country, approximately four hundred companies from twenty-four different industrial sectors, and according to the last report of the 2016-2018 edition, with a significant concentration of companies of small (40%) and medium (30%) sizes (CBD, 2018)

Since March 2020, the program has been officially suspended due to structural reworkings. According to the last report (CBD, 2018), 97% of the companies that went through the program stated that they expected an increase in sales with the new project developed. And, in 2018, the program recorded that one hundred and twenty out of the two hundred served companies invested in their business more than the funds received from the program, revealing the recognition of the value of design by businessmen. There were common behaviors and characteristics noted among the served companies. Some of them already had an internal design team or had gone through earlier experiences of hiring design projects, while others (close to 60% of the served companies) had come into contact with this area through DEX. Some companies mentioned that, through packaging design and visual communications, they had been able to introduce products into markets where earlier they had not been accepted, as well as to participate in renowned, notorious design competitions, awards, and exhibitions (national and international). Others stated that the program had had a transformative effect on their strategic positioning, management, and culture.

The interviews help explain the experience of the interested parties during their involvement in the DEX, as well as map the program from different perspectives. By analyzing the responses, patterns were observed that enabled the grouping of information into two axes. The first group brought together positive perceptions in terms of the participants' experience in the DEX, classified into four themes, as follows:

+ **Financing**: the importance of the amount subsidized by Apex-Brasil as an important way of attracting and ensuring the adhesion of businessmen to the program;

+ **Networks and promotion**: building of networks between businessmen and designers, as well as recognition that the designers receive for having projects advertised by the program;

+ **Training**: even when not focusing on training, the program generated learning through projects, influencing the businessman's vision about design and its method;

+ **Design understanding**: due to its scale, the program ends up having an impact on the entire ecosystem (associations, industries, suppliers, and investors) in terms of design's potential.

The second axis addressed the negative aspects identified by the different players. These findings were distributed into four main themes:

+ **Limitations of financing**: the amount of financing is often adopted as a ceiling by the entrepreneurs, thus limiting the scope of action of designers and even becoming a reference or indicator in the market;

+ **Designers' lack of knowledge**: difficulty dealing with export or manufacturing specificities, or cultural differences between countries;

+ **Context and lack of preparedness in the Brazilian industry**: lack of strategy of the companies themselves, negatively impacting on the product's market strategy and openness to the design process;

+ **Difficulty with metrics and monitoring**: excess of bureaucracy and high dependence on businessman's engagement to obtain metrics, as well as possible incoherence between indicators related to the projects' characteristics (i.e.: measurement of short-term returns in projects that have an impact on the long term).

It is worth highlighting those different players who were interviewed whose interests sometimes conflicted with each other. Thus, the issue of financing, for example, can be observed from positive and negative perspectives. The lack of knowledge of designers in terms of foreign culture or consumption habits is often determined by the lack of funds to carry out adequate research in loco. However, these different contributions determine important points, which facilitate improvements in the program.

4 Discussion

Molina, Castro and Barrera (2017) believe that internationalization can be understood as a structure of operations that consolidates links between companies and international markets. Export companies see design as an essential factor in the process of internationalization of their products and services. However, this is not an issue of alignment just between designers and businessmen. The lack of strategic vision and state policies for economic development generates discontinuity in important programs at each change of government (Fernández and Bonsiepe, 2008), which puts at risk the process of internationalization of businesses. While on the international stage, especially the European and Asian ones, design has been considered an essential strategic tool, driven even by specific state programs (Fonseca, Heemann, Brum, and Castro, 2016), Brazil still lacks a national design policy (Patrocínio, 2013; Patrocínio, and Nunes, 2015). In this sense, DEX is one of the few, if not the only one of the current programs dedicated to fostering the use of design as a strategic tool to increase the competitiveness and export potential of Brazilian manufacturing.

4.1 Cultural Challenges

One of the most challenging factors for innovation in export companies is cultural distance. Culture is an intangible value, and it comprises various elements and characteristics which shape a society or a group of individuals. Azar and Drogendijk (2016) argue that using a single indicator to measure a concept as complex as culture can result in a distortion of the construct, leaving aside errors of mediation of analyses and resulting in the impossibility of defining credibility, besides ideological biases. However, though the uncertainty of the insertion of new products in the global market due to cultural distance may stimulate innovation, caution is required. Furthermore, it is "beneficial to measure uncertainty directly and add it as an additional variable in the conceptual model of the relationships between cultural distance and innovation." (Azar and Drogendijk, 2016, p.193). The challenges that arise from the internationalization in markets with different, distant cultures may result in opportunities for business for a company that distinguishes itself from the competition, revealing a new vision and new products when they enter market environments that have not been explored by other companies (Azar and Drogendijk, 2016). The issue was also addressed several times in interviews about the DEX program and is possibly one of the main obstacles for a greater of the program. This is so because few businessmen invest in more in-depth research of the target market, thus increasing the risk of entering new countries, limiting exports just to countries with a consumption culture that is similar, or even discouraging exports, or conforming to expanding only in the national market.

4.2 Design as a Competitiveness Factor

Reading the works in the SR also revealed the importance of design as a competitive unique point or determining factor for the success of innovation in the results of companies, in the context of internationalization and exports. For Qiu, Kollmann-Cano, and Mudambi (2017), the sum of the business strategies and resources of a company is an element of great impact in the competitive advantage. The distinguishing point of a company is interconnected with its clients' willingness to pay when they see greater added value in the products and services. Design is a determinant factor for the increase of the symbolic, aesthetic, and functional value of a product, elevating the user's experience to other levels, directly or indirectly influencing the users' or consumers' choice when acquiring new artifacts, besides also being intrinsically linked with the construction of the brand and the success of the marketing connected to the product (Qiu, Kollmann-Cano, and Mudambi, 2017).

Innovation coupled with design has the aim of improving user experience, as well as optimizing the perception of the brand's value, by fusing various fields, including graphic, interface, and industrial design, among others such as engineering and marketing, also extracting knowledge in management, economics, and sociology (Qiu, Kollmann-Cano, and Mudambi, 2017). The readings reinforce the vision that the influence of investing in design and the influence of technological innovation are intrinsically linked to the exporting performance of companies. Azar and Drogendijk (2016, p. 182) complement this idea by affirming that this influence of

technological innovation on the exporting performance "is motivated by competitive advantages firms obtain through introducing new technologies, more efficient production techniques and new products, and processes resulting from those innovations".

According to the last report (CBD, 2018), DEX obtained effective export results (opening of new businesses, increase in sales, internationalization of companies) for various markets. Mercosul was the preferred destination of the served companies (34% of all exports, due to the cultural proximity and distribution of products, but other countries were reached in all North America (19%), Europe (25%), Africa (11%), and Asia (10%). Based on the initial funding of eighteen thousand reais subsidized by Apex-Brasil in the program, the report detected that 65% of the served companies estimated they invest up to two hundred thousand reais in the development of new products, and 35% intended to invest up to two hundred thousand reais in the next two years after the conclusion of training. It is important to point out that 71% of the served companies expected up to 50% of growth in sales with the products developed in the program.

5 Conclusions

The systematic review of the literature revealed that the lack of incentive and programs to promote design and development with a focus on the internationalization of businesses is not an exclusive characteristic of Brazil, as verified in other countries in Latin America — Argentina, Colombia, Chile, Mexico, and Uruguay. This lack of investment in technology, development, and design is quite significant in emerging countries, but even more developed countries find some barriers in the process of insertion into new international markets, such as the cultural distance and the existence of different norms, regulations, and legislation.

Innovation guided by design, with investment in the process, strategy, research, or the project of the product and service, is recognized as an important basis for economic competitiveness. Qiu, Kollmann-Cano, and Mudambi (2017, p. 544) complement this idea with the following affirmation: "Design innovation requires design firms to integrate diverse resources, manage their design inventors, and build both local and international connections to source knowledge.". However, from the point of view of hegemonic countries, Latin America's economies would be predestined to only export commodities, even if, between the 1960s and 1970s, Latin American design, whether in the professional sphere or academic teaching, might be considerably more advanced than in some European countries (Fernández and Bonsiepe, 2008).

Manufacturing is essential for Latin America's economic growth, job and income generation, and for the development of each country. This sector is the one with the highest multiplier effect on the economy as a whole, and this makes it an important engine of growth. In Brazil, for each R$ 1.00 produced in manufacturing, R$ 2.32 is generated in the economy (CNI, 2018). International cooperation between Latin American countries can enhance not only industrial production, but also the development of public policies to promote innovation that transcend the geographical borders between countries.

The analysis of the DEX program has enabled us to discuss the development of design in companies that did not previously make use of it in their business models. The surveyed data shows the different perceptions among the players involved: companies, consultants, design firms, and the creators of the program. From this analysis, it was also possible to establish criteria to establish guidelines applicable to future solutions, development, and initiatives with the same sense. However, despite the efforts and engagement of some businessmen to carry out national programs for the promotion of design in Latin American countries, and the existence of tens of thousands of professionals trained in industrial and graphic design, with their material resources and some infrastructure in their industrial park, the effective impact of design on the economy of the region's countries has been limited still (Fernández and Bonsiepe, 2008).

Strategies that combine innovative solutions with criteria of perceived value, internationalization, growth, and sustainability in business may generate new wealth in emerging countries and significantly impact the development of Latin American countries. In this sense, the dialogue between countries that aim to formulate and implement industrial promotion policies integrated into the whole region may accelerate this process. New studies about this topic are needed since the scientific production of design as a strategic tool for the internationalization of business is still too scarce when compared to its importance.

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1 From the original in Spanish: "*Manifestaciones de estos procesos son la tercerización (outsourcing) y/o deslocalización (offshoring) de diferentes actividades de bienes y servicios hacia aquellos proveedores y/o regiones que muestran mayores ventajas en su producción.*"