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PROCEEDINGS
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Entrepreneurship, Innovation, Responsible Management, and Sustainable Economic Development

MOROCCAN FEMALE ENTREPRENEURSHIP : OBSTACLES AND STRUGGLES

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Abstract
Despite women's increased participation in economic and political life, they continue to face many obstacles in their attempts to enter business. The image of Moroccan women entrepreneurs therefore remains contrasting. To clarify the debates that women entrepreneurs are forging in the economic fabric of the country in a context impregnated by the resurgence of cultural and religious fundamentalisms. This article attempts, through an exploratory study, to assess the situation of FRE through the Scoring method in order to highlight the obstacles faced by women who create and develop job-creating businesses.
Keywords: Entrepreneurship, Development of female entrepreneurship, women's struggles, Framework conditions, Scoring

JEL classification: J16, *O13, L26.*

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INTRODUCTION

Gender is at the centre of an intellectual effervescence that is widely disseminated in the social and human sciences, particularly in the field of entrepreneurship. There is now an awareness of the positive contribution that women's entrepreneurship can make to a country's economy. It was in 1975, during the United Nations conference marking the International Year of Women, that the phenomenon was first recognized. Other conferences have also stressed the need to integrate women into development. Among other things, the International Conference on Population in Mexico City (1984) highlighted the need to intensify the role of women and improve their status. In 1989, at a conference: Review of the United Nations Decade for Women, the importance of family planning and employment as factors in improving the status of women was emphasized. In Dakar in May 1992, the Pan-African Conference on Democracy adopted a resolution stating that economic freedom to undertake must be fully restored to women.

Despite its progress towards the emancipation of women, obstacles remain. The position of women in societies can slow down this ability to undertake and develop profitable economic activities. Moreover, no one can ignore the fact that the development of countries comes from the action of entrepreneurs, including women entrepreneurs (WEs). Recently, there has been an increase in the number of businesses created by women around the world.
In Morocco, female entrepreneurship is booming. More recently, support mechanisms and tools to encourage women to participate in the workforce have increased. According to the reports, it will be believed that female entrepreneurship in Morocco is unequivocal. But, the contours of the female figure of the entrepreneur in Morocco remain unclear... The presence of women in the world of entrepreneurship remains largely hidden, even stigmatized.

Despite the increased participation of Moroccan women in economic and political life, they continue to face many obstacles in their entrepreneurial attempts. If a few women leaders appear on the scene, thousands of self-employed women, traders, small business owners, cooperative partners, street vendors... remain the unknown variable in the Moroccan entrepreneurial world.

The image of the Moroccan FE therefore remains mixed. There are few studies or surveys on the subject and the data are scattered and incomplete. This absence of national foresight, in contradiction with the national objectives of integrating women into economic and social development and promoting entrepreneurship, points to the invisibility of this phenomenon and the low regard that our society gives to women who brave resistance to ensure their livelihood and that of their families or simply make use of their skills.
The efforts to promote women's entrepreneurship undertaken by public and international institutions, NGOs or associations such as the Association of Women Entrepreneurs of Morocco (AFEM), are part of an inescapable struggle on the social, economic, cultural, psychological and even political levels, to enable women to be considered as real economic actors. All these factors and variables interact together to increase the fight of the FE. This leads to the following problem: In what context do Moroccan women entrepreneurs struggle and forge themselves in the country's economic fabric in a context that bears the imprint of the resurgence of cultural and religious fundamentalisms?
To address this issue, the approach taken is exploratory. This is an evaluation study of women's entrepreneurship development in Morocco, conducted among 200 women entrepreneurs (WECs) and supplemented by other research sources. The analysis of the situation of female entrepreneurship (FE) by the Scoring method would allow us to see a set of indicators composing each of the framework conditions in order to identify the obstacles faced by women who create and develop businesses. The evaluation of the framework conditions will enable it to determine the appropriate policy orientations and measures to address the priority needs and opportunities necessary for the promotion of TF.
This study combines qualitative and quantitative research methods aimed mainly at identifying areas where the country is making progress and where it needs to invest more in order to target FRE development.

1. LITERATURE REVIEW AND SPECIFICITIES OF WOMEN'S ENTREPRENEURSHIP.

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Social discrimination based on gender is a fact of a certain permanence1 both in African society and in different cultures. Despite the global struggle (NGOs, governments, international conferences), the awareness of equal rights, and new laws (new family code) to change social representations and influence practices, this segregation continues to be repeated and expressed. Indeed, the word "gender" has multiple meanings. When we speak of "gender stereotyping", the word "gender" is to be understood in the sense of the social and cultural construction of male and female identity. Thus, gender is the social explanation of sex, in other words, sex represents the natural and biological, while gender is cultural social attributes that explain social identities and determine the relationships, social roles between women and men in society.

Underlying this is a social construction of the gender relationship under the prism of a gender struggle in which women must "impose themselves" in order to have the right to exist. An existence in a "critical" context of deprivation of liberty, of competition with man in a framework of sexual division of space ("reserved areas"). Finally, the mention of its potentialities in the economy expressed in a modal way suggests a hypothetical framework constrained by constraints.

1.1 The theoretical debate on gender and entrepreneurship

The entrepreneurial concept is at the heart of theoretical debates and public policies. The growing interest in this phenomenon is linked to its role and central place in economic and social development through the creation of jobs, income and wealth it generates.

In entrepreneurship, the notion of gender is found in the work of White (2006) and Spector (2008), who demonstrate that the creation of companies can be explained by a biological or genetic justification. Verstraete and Fayolle (2005) explain it in terms of opportunities such as the essence of entrepreneurship. That is, the identification of opportunities is influenced by self-perception. In the same vein, Lagowitz and Minnti (2005) show that women's entrepreneurial attitudes offer a higher sensitivity than men to subjective parameters (perception of skills, etc.)2.

Others have tried to explain gender through entrepreneurial socialization, which plays a central role in the socio-psychic construction of gender attributes and identities (Dafflon (2006), Reviallard (2008)). Gupta et al (2009) show that gender stereotypes that can affect the construction of entrepreneurial intent have their ramifications in the process of primary and secondary socialization of individuals3.

Dubar (2000)4 raised the issue of gender in entrepreneurship. He tried to see how gendered social constructions, the weight of gender stereotypes influence the way in which FEs position themselves in institutional fields by structuring their activities (networking, relations with stakeholders, etc.), facilitating or complicating the processes by which they manage to be recognized by the partners in their professional activities, and apprehending. In other words, Dubar focused on building women's entrepreneurial identity and integrating them into their surroundings.

1.2 Sociological and epistemological context of the struggle of women entrepreneurs

Currently, the upheavals taking place in developed and developing countries are not the only reasons for the upheavals affecting women's entrepreneurship. The declarations of principles, the debates on the gender approach that take place in political life, the opinion movements and the press are all evidence of the extent of the struggle being waged by women today to carve out a place for themselves in economic life.

In entrepreneurship, the role of women tends to be more assertive. The proportion of women entrepreneurs and entrepreneurs is constantly increasing. Nevertheless, it still remains a minority in the business world everywhere and faces specific obstacles throughout their entrepreneurial process.

Drucker (1977), Rajemison (1995) identify factors that are not economic but much more related to changes in values, perspectives, demographic and institutional attitudes. As a result, a large body of literature and research has addressed this issue to identify the underlying factors and trace the path of PAs. They showed that the female entrepreneurial dynamic is explained by economic, social and cultural factors.

Although most of these factors are sometimes common and inseparable for both sexes, they tend to be more pronounced

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for PAs. Several questions have been raised; some believe that business creation is the result of psychological motivations and/or contingency factors. It is clear that there is a "global" mobilization and new interest on the part of public authorities on the subject of women's entrepreneurship in all sectors, which is not only essential for the economy, but also vital for society.

Increasing the rate of new business start-ups by women is essential to stimulate innovation and employment in the economy. Therefore, it was necessary to make mechanisms and sources of information and advice available to them and to provide them with the support they need to start and run their own businesses.

Similarly, the psychosocial forces and cultural context in which women evolve have an important influence in the genesis of innovative behaviours (Rajemison (1995), Gasse, D'Amours (1993); Zouiten, (2005)), particularly in the field of business creation.

1.3 Specificities of female entrepreneurship

In terms of entrepreneurship, women certainly face particular constraints and have their own objectives and motivations. Thus, Fes are often discriminated against in terms of access to certain services, in particular credit, public procurement, etc.

The literature is quite rich in this field (Histrich et al, 1987, levy Tadjine and Zoniten 2005, Brid and Brersh 2002, St-lyr, 2005…). It is fundamentally based on the comparison between men and women in order to highlight the uniqueness of female entrepreneurship. Hence the need for specific support and an appropriate policy dedicated to its promotion, in particular within the framework of positive discrimination (funding quotas, reserved public contracts, etc.).

Regardless of the gender dimension that remains essential in this case, the problems faced by women depend largely on their social status, which remains linked to the social, cultural and sometimes political context. Many studies5 have thus highlighted female entrepreneurship in terms of differentiation of personality and cognitive vision, without considering women as separate entrepreneurs, since they deploy practically the same initiative and management capacities as men. Nevertheless, it must be admitted that they bring a more personal and feminine touch to their traditional skills that are available to any entrepreneur regardless of gender. They are considered to be intuitive, quick and ingenious normative. The objectives sought by Fes would exceed those of the growth and performance of their company.

On the basis of these considerations, several female skills can be highlighted, including:

- A communicating attitude and a high quality of listening. One of the key aspects of women's added value is their tendency to cultivate personal relationships and to be present on networks using their social and communication skills.

This human and cultural factor is a real asset for Fes, who often bring feelings into play in their daily management of their company;

- Secondly, a discreet management style inspired by the domestic economy model. Women are big hard workers working behind the scenes, not very concerned about pomp and circumstance and have experience in handling money.

Generally, they are much more serious, emphasizing perfectionist aspects while paying attention to detail and efficiency.

- Finally, a good control of time while being part of the duration. Indeed, women calculate and manage their time better, use their potential effectively and adopt a policy of steps and patience. Consequently, their approach is characterized by endurance and tenacity in the implementation of their project.

Sometimes, these qualities can constitute handicaps in the entrepreneurial profession. For example, women's emotional side is a weak point in work and decision-making. Successful entrepreneurs are often not those who make feelings, but those who decide, who set positions, limits.

2. PROFILE AND MOTIVATION OF WOMEN ENTREPRENEURS IN MOROCCO

Women's business creation and management is growing rapidly around the world. It is true that for a long time the literature was focused on male entrepreneurship and female entrepreneurship has remained a completely fallow field.

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This literature has focused on certain characteristics such as socio-demographic data, the specific environment, motivations, skills, obstacles encountered, existing opportunities…

2.1 Motivation of women's entrepreneurship

Various reasons have been put forward to explain women's entrepreneurial commitment, including the desire for independence that generally manifests itself among women who were previously employed. Sometimes, some have voluntarily left their jobs to go into business. In this case, entrepreneurship is a second career in the PA trajectory.

The reason for autonomy from the husband or even the family is also advanced as an important motivation for entrepreneurship, and the will to survive is also an essential objective in this area, especially for women who have dropped out of school early or in the event of unforeseen difficulties: widowhood, divorce.

Concerning the motivations for the creation of these companies in Morocco, they are multiple and diversified... Thus, one third of the business leaders surveyed highlight their desire to succeed in their personal project (33.3%), then their interest in the field of activity they exercise (26.7%). The third factor is the opportunity to start their own business (20.0%) and finally the desire to acquire certain autonomy (10%).

2.2 Female entrepreneurship in figures

Placed in 13th position in terms of female entrepreneurship development, Morocco is ahead of several emerging countries and is the dominant country on the African continent. However, despite this ranking, women's entrepreneurship remains weak, as shown by the low percentage of female entrepreneurs in Morocco (12% in 2015)6. Imperceptibly of this tiny percentage, there are several obstacles to the development and promotion of Moroccan TF. Moreover, in terms of the wage gap between men and women, Morocco is ranked 130th out of 142 countries. This reality reflects the illegal practices of which women are victims.

On the other hand, women are gaining ground and becoming more autonomous in the public sphere. In recent years, there has been an increase in personal initiatives: many women are investing in the labour market or developing income-generating economic activity. "Women's presence is more visible in small and very small businesses. Women are embarking on projects that do not require large investments"7. Since 2009, the pace of women's business creation has been accelerating (Graph 1). Growth conditioned by an unequal geographical distribution, marked by a high concentration in Casablanca (37%) and Rabat (12%). But the network of companies created by women is gradually expanding in other cities such as Fez, Marrakech, Tangier and Agadir... (see graph 2)

Women invest in most economic sectors, mainly in trade (24.5%), industry (121%), with predominance in services (49%). They are also very present in the informal sector, 12.4%8. They develop activities that sometimes take on an international dimension: 30% of companies run by women have a local influence, 44% at the national level and 21% at the international level.

According to the figures, women represent 13.2% of self-employed workers and 10.3% of members or members of cooperatives. Put in perspective with international data, Moroccan statistics show the progress that remains to be made to promote women's access to entrepreneurship. In fact, in recent years, women's entrepreneurship has progressed everywhere and is now the subject of remarkable attention from international institutions and NGOs. However, despite this emphasis, in most countries they still constitute a small proportion of entrepreneurs. In Morocco, there has even been a decline over the past ten years in the share of self-employed women and employers (-4.6%), despite policies to encourage business creation that now incorporate a gender approach and the implementation of specific programmes. On the other hand, the rate of women members of cooperatives increased by +2.5%, thus showing the positive aspects of development aid programmes for women, particularly on collective projects in rural areas, with the support of microcredit operations.

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3. OBSTACLES AND OBSTACLES TO THE DEVELOPMENT OF WOMEN'S ENTREPRENEURSHIP IN MOROCCO

Gender stereotyping is a discriminating feature and a barrier to female entrepreneurship since it is based on socio-cultural criteria and norms. These are mental, social representations that associate entrepreneurship with the male sex par excellence. Others stem from the economic and financial environment: the banking sector's reluctance towards VSEs, when they are headed by women, the sometimes overly cautious behaviour of women creators with regard to borrowing and reservations about a growth strategy. The difficulties faced by women entrepreneurs are very similar to those in other countries, but many governments have become aware of the challenge of female entrepreneurship and have implemented actions to better understand and promote it.

The FEs in Morocco, like many countries, are therefore confronted with both retrograde representations that stigmatize them as soon as they leave their assigned roles and a social status that makes them vulnerable. This is particularly the case for women heads of household (widows, divorced women), who are numerous among the CFEs. This status of single women, dependent on their families, which gives them an emancipation from social and male control, destigmatizing their activity.

3.1 The inevitable impact of the social context on women's entrepreneurship.

According to sociologists, professional and family structures related to social life influence women's access to jobs (Aldrich, 1989). On the other hand, the capacity to accommodate women's participation in entrepreneurship is in line with the cultural requirements and values of their society, which differ from one country to another.

Women face more social and cultural barriers than real legislative obstacles to their economic projects. In Morocco, both labour legislation and laws governing the status of women do not prevent entrepreneurial activities from being carried out. It is therefore elsewhere that we must look for obstacles limiting the presence of women in positions of responsibility, in the business world in general and in entrepreneurship in particular.

Socio-cultural practices are found to be reefs that Moroccan FEs feel more acutely when it comes to illustrating gender discrimination or harassment. The family environment is a cultural impediment despite the fact that, legally, Moroccan women are no longer required to seek the approval of their father and/or husband. These social practices are justified by the customs characterizing Moroccan society, requiring women to bow to certain rules of conduct with regard to their families and Moroccan society.

As such, the status of housewife is still predominant. Their low presence in the labour market, and even less in skilled positions, has a twofold effect, namely to offer few examples of success stories that could inspire vocations and to limit male acceptance to subordinate themselves to female superiors. As a result, the image of working women in Morocco is still not valued. Women's work is still widely perceived as a necessary evil to overcome difficult financial situations. It remains the prerogative of the working class, who have no choice but to find a job to remedy male income insecurity and poverty. Of course, more and more women are entering the labour market and this tends to change attitudes, but they do so in reserved niches. The termination of employment at the time of the children's birth favors the role of mother to the detriment of professional activity. In terms of social promotion, women and their families continue to favor marriage strategies and the search for a professional career that would bring financial autonomy.

3.2 Lack of a gender approach in regulatory and institutional texts

Women are certainly encouraged by institutional support measures put in place. However, the regulatory texts remain ambiguous. In this case, Law No. 15-95 forming the Moroccan Commercial Code, which writes to the "Male", the term "Trader" to designate both the trader and the trader, the only reference to the woman is found in article 17: "A married woman may engage in trade without her husband's authorization. Any agreement to the contrary shall be deemed null and void. This requirement had long hampered women's freedom to engage in economic activities, partly explaining the marginalization of structured female entrepreneurship in Morocco.

Again, the Moroccan code of good corporate governance practices stipulates that the governance body must be composed of members who bring diversity and gender balance. At first sight, this regulatory framework appears to be

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egalitarian and non-discriminatory. But as soon as we refer to the specific code of SMEs and family businesses, it refers to the entrepreneur, manager, member (without any reference to the female gender, nor to the need for gender balance).

3.3 Devaluing prejudices against informal entrepreneurs

This devaluation of women's work is mainly felt in the world of entrepreneurship, where women are still subject to persistent prejudices, particularly those from disadvantaged social categories, whose activities are often depreciated. Consequently, one of the explanations is to be found in the devaluation and stigmatization of their presence in the entire productive and economic sphere. Entrepreneurial activities, although widely developed by women, are often informal in nature, rarely considered as entrepreneurial activities contributing to economic development.

There are many sectors in which women have demonstrated professional and entrepreneurial skills: manufacturing and selling food products or handicrafts, organizing weddings, activities related to agricultural work, etc. It should also be noted that some of these activities take place in the public space. The spectacle of women standing in public spaces and sometimes sitting on the ground is reduced to activities considered degrading (begging, prostitution...).

3.4 Limits to access to finance and lack of information

Despite the progress made in women's rights in Morocco, thanks to the new constitution, laws and regulations, women-owned businesses continue to face two major problems:

- Access to finance is an important barrier for women. As in the SME culture, most of the financing of women's enterprises consists of self-financing, personal savings and family assistance, and the use of bank credit remains very minimal. Admittedly, this difficulty is not specific to women, but it reinforces the other discriminations and constraints they face.
- The main problem mentioned by entrepreneurs, both male and female, is administrative hassle and corruption.

For women working in the informal sector or running small businesses in the formal sector, the issue of financing is more critical. While micro-credit has ensured that some of them have raised capital, most find their initial capital through a contribution solicited from relatives or through savings by carrying out parallel activities. The low rate of bank ownership, the lack of guarantees, the reluctance of banks, the scarcity of programs adapted to the development of micro-projects for vulnerable groups and the cumbersome administrative procedures keep many small entrepreneurs in the dark.

This banking and institutional context, which is not conducive to the promotion of entrepreneurship, is reinforced by the lack of information available to these women. The transition to formalization, expansion and consolidation of their activities are hampered by their lack of knowledge of markets, managerial techniques, etc. The lack of information on public institutions supporting business creation remains little known for Moroccan women entrepreneurs, such as the Moroccan Investment Development Agency or the Regional Investment Centres. Unfortunately. In this respect, information campaigns are inevitable to bring these organizations closer to Moroccan FEs.

3.5 The impassable male guardian figure

In Morocco, it seems that women find it difficult to do without a male guardian figure. However, this inheritance that wives or daughters take over should not diminish their merit and skills. It accurately reflects that the entrepreneurial career still requires the "protection" of a male element, which brings a capital, both financial and social, a relational network, a registration of the EF in a genealogy of entrepreneurs and functions as a guarantor of both morality and trust. Thus, the study of the biographies of women entrepreneurs always reveals a father, more rarely a husband, who set them off, whether through the resumption of a family activity or an initiative in another sector, with a strong desire for generational transmission, by necessity or by an environmental effect where entrepreneurship is the preferred path to a professional career and social advancement.

3.6 Lack of supportive networking

The entrepreneur's social and professional knowledge base is essential in the creation and development of her project.

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These networks can take different forms. This may involve assistance from family and friends or professional bodies, particularly during the creation phase, professional relationships (supplier-clients,...) or entrepreneurs belonging to the family and friends of the creator.

Despite the existence of several organizations supporting and promoting women's entrepreneurship, it can be seen that few Moroccan women are members of these groups. And yet, these associations can encourage and support the creation of companies, inform, supervise and assist them in the management and sustainability of their companies, as well as develop the managerial skills of the FEs by providing them with a network that can play a lobbying role with public authorities and international institutions, such as the Association of Women Entrepreneurs of Morocco.

These institutions are a forum for meetings, information exchange, training and solidarity aimed at improving the business climate for Moroccan women's businesses. However, women's limited involvement in such networks is due to their lack of knowledge of these organizations and their lack of time and interest.

4. AND THE STRUGGLE CONTINUES

The country's laws and regulations have made very significant progress towards gender equality. Women have equal rights in the field of work, access to property, trade, production and exploitation, access to basic social services and others. However, the weight of social traditions and perceptions of women's capacities still have a significant impact on the effectiveness of these rights. This prevents a good segment of the female population from developing the skills and experience to invest in entrepreneurship with the same chances of success as men.

Specifically, the evaluation of the framework conditions of the Women's Entrepreneurship Facility (WEF) showed that Morocco is relatively more advanced in improving the gender- sensitive legal framework and the development of business development support services (BDS), while the leadership dimensions, access to gender-sensitive financial services, access to technology and markets remain behind (see Figure 3). As mentioned above, it should be noted that the existence of the relatively favourable legal framework does not necessarily reflect the effectiveness of the guarantees and rights enshrined in the legal and legislative texts.

The gains made by the country in terms of the number and performance of VSEs/SMEs have not enabled women's businesses to observe the same momentum and benefit from the spinoffs of the country's efforts. This is reflected in the share of women's businesses in the country's total number of businesses, which has remained stagnant at around 10 to 12%.

Indeed, no specific government program for the development of women's entrepreneurship has been initiated so far. Women's enterprises, although they have their own specificities, tried when they could to integrate into existing policies and strategies that proved to be very poorly adapted to their needs. The barriers to access to the various products and services offered by these programs remain impassable for most EFs, particularly those located in rural areas and/or those with low levels of education. The lack of financial security, encouragement of the family environment and geographical remoteness are also factors that heavily affect the growth of female entrepreneurship.

4.1 Overlapping speeds of progress

The DEF evaluation showed that there is a large gap between the objectives set by the country and the real benefit derived by the FEs. At a time when the country is paying particular attention to gender and equality issues, women's economic integration issues and women's political representation issues that are very much in vogue, the ET is finding very little place in this enthusiasm. This is reflected in the very significant progress made in the legal framework governing business law and the right of access to services (financial, new technologies, social rights, property rights, etc.), which are not very gender-sensitive and where the data collected by this evaluation show that FEs are not very present. The only gender-sensitive legal framework is that governing labour law, which in practice is hampered by socio-cultural traditions that disadvantage women and limit opportunities for the emergence of their entrepreneurial potential.

This evaluation of the DEF also highlighted another contrast with women's gender and economic rights ambitions, namely the failure to take gender into account in the design of actors' information systems and the scattering of DEF issues across various government strategies and entities, which dissipates efforts and makes it difficult for the DEF to

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emerge as a strategy in its own right with full socio-economic impact.

4.2 Challenges to be addressed: Survey results9

The report on general female entrepreneurship and the GEDI Gender Development Index ranks Morocco among the eight weakest economies in the group of 30 countries studied and would have downgraded by one point in its ranking from 2013 to 201410.

The overall assessment of the six framework conditions by the Scoring method enabled us to analyse a set of indicators in order to identify the obstacles faced by women entrepreneurs who create jobs.

The six framework conditions (CC) (see Figure 3):

CC1: analyses the gender dimensions of the legal and regulatory system that advances women's economic empowerment.

CC2: political leadership and effective coordination role in promoting the DEF,

CC3: PA accessibility to gender-sensitive financial services,

CC4: the availability of supply and the nature of demand for gender-sensitive business development assistance (GBA),

CC5: FEs' access to markets and technology and the effectiveness of channels for the representation of women entrepreneurs and

CC6: FE participation in political dialogue.

It appears that the assessment of the situation of RU in Morocco is below the average with 1.8 points compared to an average of 2.5 from the evaluation scale which is based on five criteria for each CC. Indeed, only the first CC on the gender-sensitive legal and regulatory system scored slightly above the average (3 points), which reflects Morocco's efforts in this area, although further efforts are needed to strengthen the effectiveness of laws in practice. Market access and technology and political leadership in place and coordination for the promotion of women's entrepreneurship are the weakest links in the overall field of promotion of RU. This result reflects the strong correlation that generally exists between the level of trade and the level of "technologisation" of entrepreneurial activity that is addressed in the 5th CC, and the degree of success of the country's policy in promoting/coordinating the entrepreneurial sector. In other words, the weak leadership and coordination of the DEF explains the poor performance of women's enterprises in terms of access to markets and technology. The results obtained for the 4th CC focusing on women's access to EDS and the 6th CC focusing on the representativeness and political participation of FEs are also disappointing in view of a certain enthusiasm that has been detected in the behavior of FEs, a relative satisfaction that can be explained by the effects of publicity made around the successful experiences of EDS and networking but which is contradicted by the reality of the data collected. On the other hand, concerning the 3rd CC relating to financial services provided to FIs and which has been widely criticized by them, although far from the average, reflects rather the enthusiasm and confidence shown in the FIs' creditworthy behavior. That said, much work remains to be done overall to promote and develop women's entrepreneurship.

It follows that among the demands in the context of the fight against FE can be summarized as follows:

Demand the specificities of an approach in terms of solidarity economy and gender

- Mobilizing for a recognition policy: the central role of alliances
- Researcher/stakeholder alliances
- Alliances between actors
- Alliances with social movements
- Alliances with feminist networks
- Alliances with the media
- Seize current crises as opportunities

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CONCLUSION

Moroccan working women have a hard life. The Economic, Social and Environmental Council (EESC) depicts an alarming situation. Although the 2012 report mainly focused on recommendations addressed to the government to combat female discrimination, the striking observation on the handicap of female employment is the "ineffective" laws. The main constraints faced by women entrepreneurs are those related to unequal access to resources and opportunities. On another level, public administration and the formalities necessary for the creation of a new business are another obstacle for Moroccan women: corruption, the slowness of administrative formalities and bureaucratic attitudes are all major obstacles for an entrepreneur.

To remedy these problems, it is desirable to equip ourselves with effective instruments and consistent indicators to assess the effectiveness of gender equality in economic life as a tool for reducing inequalities. This involves harmonizing the definition of indicators produced by the various bodies, in particular with the Convention on the Rights of the Child and the standards of the International Labour Office.

Also, the recent establishment of the National Employment Observatory would provide us with information through reports on women's participation in economic activity and the discrimination to which they are subjected. It is also advisable to adopt a comprehensive and multidimensional strategy, and to set up a social security system for women working in the informal sector. Finally, the promotion and support of female entrepreneurship through the development of mechanisms to support FEs in the various regions of the kingdom. The EESC also recommends that access to public and private sector tenders for women's businesses be encouraged, in order to ensure equal market access for male and female companies.

We bet that by overcoming these obstacles, Morocco can use this showcase to showcase its know-how in the business world, especially since the Moroccan economic fabric represents a fertile field for the development of women's entrepreneurial spirit.

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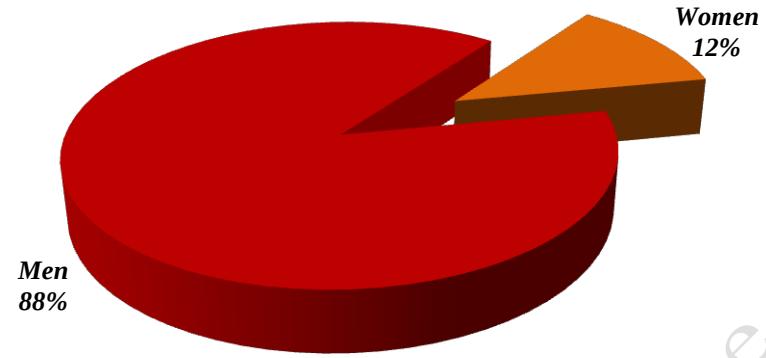
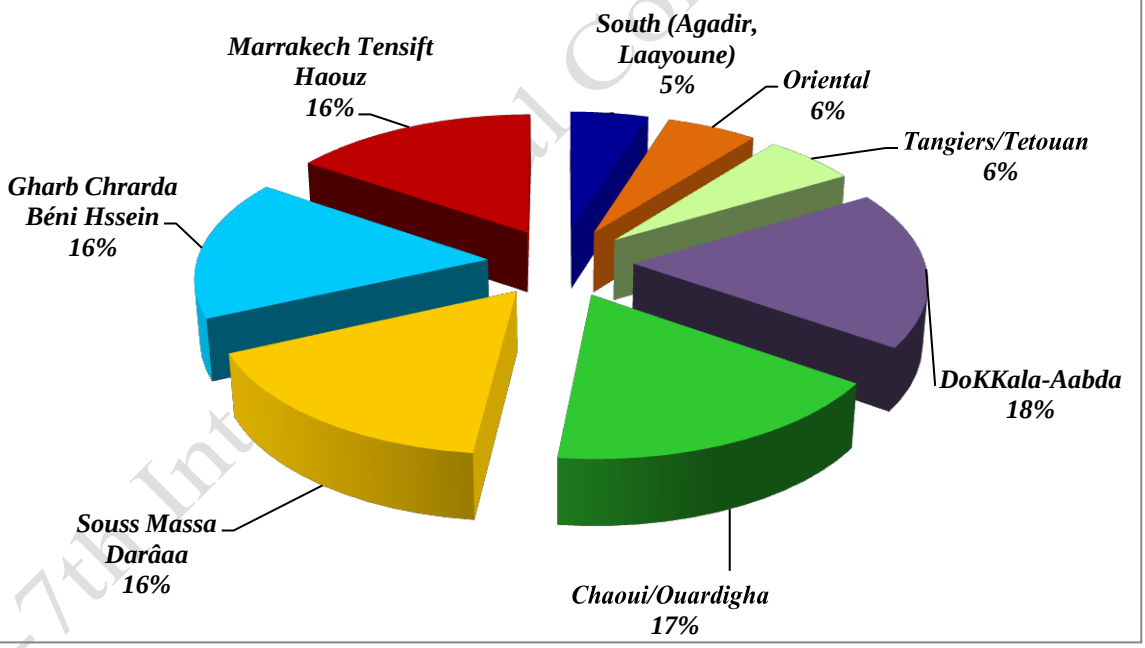
FIGURES AND GRAPHICS

Graph 1: Percentage of Women Entrepreneurs



Graph 2: Distribution of Women Entrepreneurs in Morocco



Source: HCP, 2013: "Moroccan Women and the Labour Market: Characteristics and Development", p7

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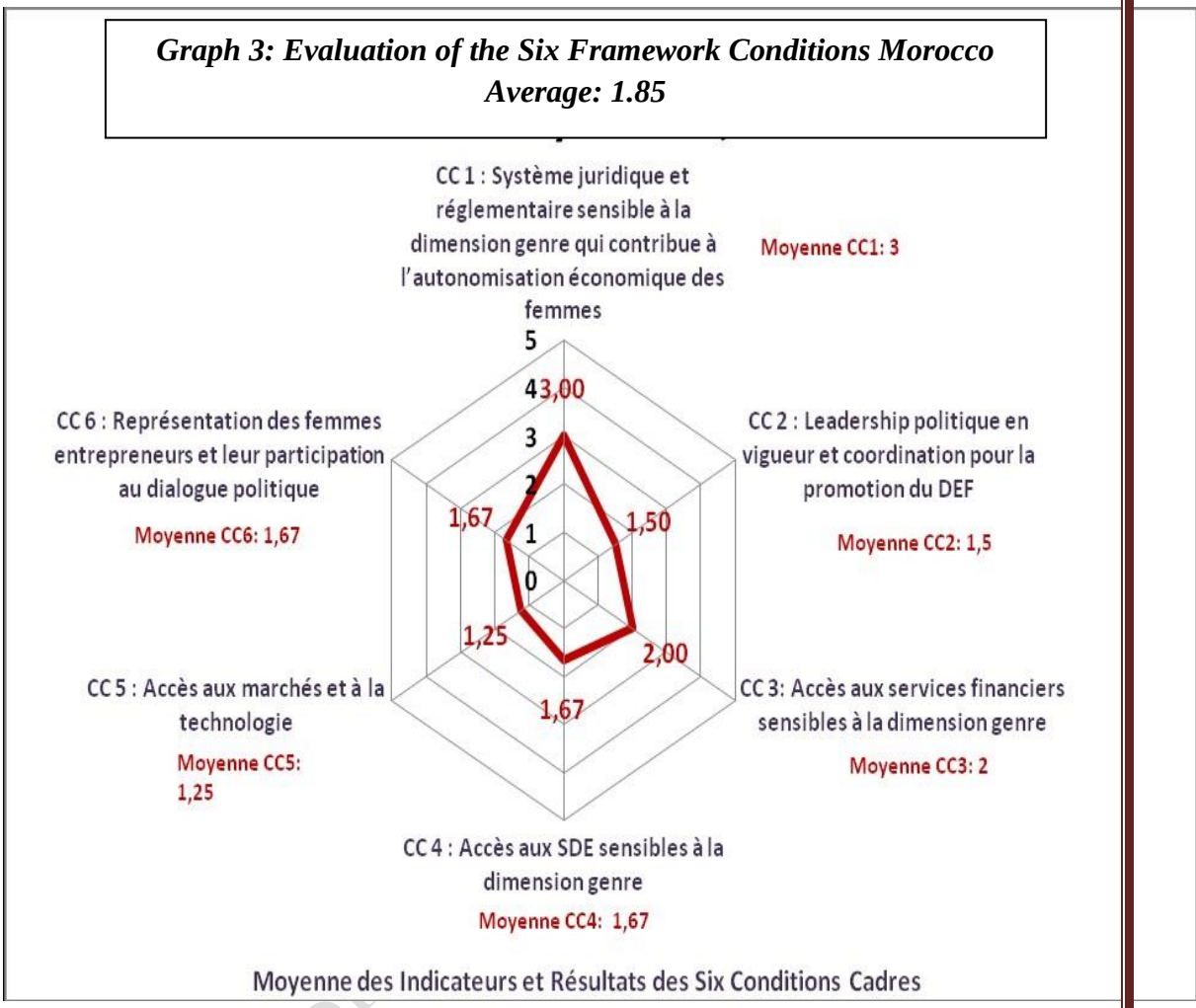
Graph 3: Evaluation of the Six Framework Conditions Morocco Average: 1.85



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[1] - Bourdieu Pierre (1998), PP 112_152.

[2] - Chasserio S. and Paillot PH (2014)

[3] - Ibid.

[4] - Dubar Claude (2000).

[5] - Carland & Jane, (1991).

[6] - Soraya Badraoui, President of the Association of Women Entrepreneurs of Morocco (AFEM).

[7] - Ibid.

[8] - According to the study carried out on this sector in 2000 by the HCP

[9] - Four research sources were deployed: literature review, focus groups, key informant interviews and a survey of 200 CTFs

[10] - GEDI, 2014: "The gender global entrepreneurship and development index (GEDI): A30- country analysis of the conditions that foster high-potential female entrepreneurship", Full report of findings, p 4.

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EDUPRENEURSHIP FOR INCLUSIVE GROWTH - A SOCIAL PERSPECTIVE

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Abstract

Edupreneurs are entrepreneurs in the education sector and operate for educational services. Edupreneurship is a new business paradigm shift in entrepreneurship by helping people to reach their true potential. The village is the basic unit of Indian society and constitutes the backbone of Indian economy. Agriculture accounts for nearly 50% of the country's workforce, 18% of the total GDP and nearly 18% of total export earnings and it is also the supplier of raw material to major industries. Affordability and accessibility of education are keys to mass literacy and inclusive growth in rural India. Around 70% of the population lives in rural areas covering around 6, 40,000 villages and the quality, quantity, affordability and accessibility of educational inputs are still a mirage. Government has been consistently spending around 4% of total budget outlay on education sector in the past few years; and it is not that the government is not doing anything but the paucity of innovation and entrepreneurship in education sector in the face of high costs of distribution that matters much for understanding the malady. Indian government is committed to six internationally agreed education goals aim to meet the learning needs of all children, youth and adults. But the achievement of these goals has become a mirage due to high levels of school drop outs. More generally, reasons of school dropouts can be classified in to some broad categories like school-centric, and parent-centric. Among others, poverty is one of the main determinants of school dropout. Family economic circumstances are important to meet the hidden and upfront costs of schooling, failure of which leads to many temporary as well as permanent dropouts of children. There is a need for a more complex understanding of the relationship between poverty and school dropout (Rupon Basumatary, 2012).

The literature review by the authors revealed that more inclusive growth in education has not been happening due to high university population ratio, low levels of innovations in educational sector and less entrepreneurism. While we cannot discount the factors of poverty, paucity of teachers in rural areas, poor accessibility to schools etc, there is a strong case for rural innovations and usage of technology for ushering a dynamic educational climate. Edupreneneurship is the key for the malady.

An attempt is made in this paper to understand the existing opportunities for the rural people and suggest possible innovations in the educational front for a meaningful inclusive growth. The paper is exploratory and the research is aimed at finding solutions to the malady of illiteracy prevailing in rural India with specific reference to vocational education and entrepreneurship for sustainable rural growth in Indian context. There is a tremendous scope to develop a number of indigenous technologies and grassroots level innovations in rural India. Sincere efforts are required to encouraging creativity, grassroots innovations, and creation of skills right from the village stage. There is an ardent need to develop a new system of vocational and entrepreneurial education in Indian context which is suitable to the job market and predominantly agrarian economy of this country.

Keywords: Inclusive Growth, Edupreneurship, Rural Entrepreneurship, Educational Innovations, Agrarian Economy

1. Introduction

The word 'preneur' has various usages in the English language. If one starts a business after 55 years of

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age, he is known as a senior-preneur. Authors are known as academic entrepreneurs. Similarly, there are social entrepreneurs, intrapreneurs, cross-cultural entrepreneurs, biodiversity entrepreneurs, media-preneurs, business entrepreneurs etc. The word 'entrepreneur' comes from the French 'entreprendre', which means 'to undertake'. The entrepreneur undertakes the risks of a business. In broader sense, an entrepreneur is an innovator who recognizes opportunities; converts these into marketable ideas; adds value through skills, money, efforts, time etc; takes risks of market to implement his ideas; and gets the rewards from his efforts.

Business entrepreneurs are profit motive. They continuously innovate to capture ever increasing market share. Social entrepreneurs also have the same qualities but they have a mission and concentrate to solve problems for which the market and the public sector enterprises have no interests. Now-a-days, social entrepreneurship has emerged in unprecedented numbers among the new generation of entrepreneurs.

Entrepreneurship education has emerged as one of the fastest growing field in the world today. American research shows that students after taking just one course in entrepreneurship have become self-employed in accelerated numbers, to start successful businesses and social enterprises.

Well developed education sector indicates developed economy of a nation. In post liberalized Indian economy, private entrepreneurs have also entered in education sector, especially in higher education. These entrepreneurs contributing in the field of education are termed as Edupreneurs and are transferring the education sector to provide lot of opportunities and career options to the youth of this country.

Educational Entrepreneurs (Edupreneurs) are called the leaders of society and have the responsibility and accountability to generate and manage educational resources in sustainable ways to the betterment of society in general and their own growth in particular. This paper studies the field of edupreneurship which is contributing to employment generation and providing professionals for the industry.

2.1 Edupreneurs are shifting the Scenario of the Education segment

In an article Ms.Shobana Mahansaria, (2017) Co-founder, Dolphin POD writes that a rapidly growing economy like that of India requires an adequate supply of accountable and quality education. The Indian education industry has always been a significant contributor towards the economy and is well poised for continuous growth. Today, with the inclusion of more private players marking the scenario, education is witnessing a significant yet progressive change. Therefore, industry is set to achieve its peak as the idea of business via education catches up, with edupreneurs on an all time high. Currently, more and more entrepreneurs are stepping into the education market with an idea that leveraging pedagogical expertise with advancements while providing a fresh approach is how education should be moulded. Students are becoming world-wise at an increasingly earlier age and hence, are acclimatizing with global education on a steady basis (Shobana 2017).

As a rich human resources nation, India is harnessing the rising number of edupreneurs to achieve economic as well as social goals at a faster pace. Their rise is compared to that of software engineers and BPO operators, who had singlehandedly, accelerated the pace of India's economic progress in an unbelievably short period of time. By encouraging edupreneurs to take off, the government is tackling unemployment and illiteracy headfirst, with positive results. Frustrated by the abysmal situation of earlier education, these entrepreneurs have taken it to task in changing the fabric of a system that was based purely on rote learning (Shobana 2017).

In the past, the state of both government and private institutions was deplorable, as education was solely focused on a mark-based achievement. The private schools propagated a brand of education that was outdated and restricted to the bourgeoisie of Indian strata, restricting quality education from the majority of population. The government factions were no better, with lack of resources, support or quality in education imparted to deserving individuals restricted by monetary capacity. A chasm was created, which edupreneurs have attempted to fill, through quality education at a nominal package. They have successfully changed the perspective of education from being bookish to supplementing a holistic

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growth. They have also instilled confidence amongst parents that, their children will receive personalized attention and a competitive education. The edupreneurs have kept their promises towards optimal education by attracting talented teachers, implementing effective teaching methodologies, and inculcating learning activities to ensure that children are able to unearth their limitless potentiality and channelize it for the nation's growth and development. The act of offering scholarships to deserving students have been instilled into the halls of education by these edupreneurs, who believe that diamonds can also be found and honed in the rough. Hence, for these entrepreneurs, education is the way to go as India gears itself for another batch of successful innovations to shape and cement the entire landscape (Shobana 2017).

2.2 Ideal Destination for young learners

India's education market is brimming with opportunities. The country is in dire need of education start-ups and supporting private capital to energize and innovate its education system. Elets News Network (ENN) in its survey of edupreneurs found a number of players who are taking strides and emerging successful in their ventures (Digital Learning Magazine, 2015).

These numbers present a story of underlying opportunity. There are approximately 1.5 million schools in India, of which almost 400,000 schools are private schools. The education market in India is worth around US$92.98 billion and higher education contributes 59.7 per cent of the market size. The market is expected to grow at 18 per cent per year. With over 50 per cent of India's population under 25 years old, giving India the advantage of the demographic dividend, skill development has attained utmost importance (Digital Learning Magazine, 2015).

These figures are showing acceleration, and throw light on the growing Indian education market, and the innumerable opportunities it offers; but more importantly, also highlight the gap between the educated population and employable population. Statistics reveal that less than 25 per cent of the graduates are actually employable. It is believed that based on the current and future manpower requirements of the various sectors; there is a huge demand-supply gap in the education space (Digital Learning Magazine, 2015).

2.3 Entrepreneurship in the education sector

Speaking further about the importance of Entrepreneurship in the education sector, Gowdhaman Margabandu, CEO, Digital Future of Education says, "We want that an Indian product should gain prominence globally, and we are taking baby steps in this direction. The Indian market in education vertical alone is about US $90 billion. In other verticals we have a target market size of over US$ 200 billion" (Digital Learning Magazine, 2015).

Ranu Kawatra, Co-Founder and CEO of Maxx English said, "India is at the cusp of huge growth and the all financial forecast from knowledgeable pundits bear that out. To do justice to this opportunity India is in dire need of an educated and skilled workforce and this need is felt by all stakeholders resulting in opening up a host of opportunities for the edupreneurs. The expansion of the rapidly growing internet footprint, accessible through both the large and small screen augurs really well for both the learner and the entrepreneur. However along with this opportunity comes also responsibility to make a difference and people who keep this in mind will do well" (Digital Learning Magazine, 2015).

Sasikanth Chemalamudi, CEO, Brainwave Edutainment said that the development of human capital and economic capital in any country is in a large way related to Education. Considering the sheer demographics of the country, India is a very lucrative market. However, in addition to rich promises, it is also a land of contradictions and dichotomies. On one hand, we boast of the world class IITs and IIMs, while on the other we have schools existing without teachers and some maybe with just one student. Course birdie says that they have found out about the huge gap between student learning outcomes and market demand. Statistics suggest that around 3-4 million students enroll for distance education

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programs every year and probably another 0.5-1 million students are pursuing online education courses. This market would currently be in range of US$3-4 billion and growing continuously. Beyond this is the e-learning and digital content market where many course providers are interested to launch their courses in online modes (Digital Learning Magazine, 2015)

Bala Bhaskar G T, Founder, Genius science academy says that a major benefit and big Social Impact of edupreneurs introducing initiatives to use technology penetration of learning at all levels. The inflation in economy is a resultant of low waged unskilled labor that is majorly high school drop-outs. The infra-structure and the teaching techniques in rural schools are the root cause for such a huge high school drop-out rate" (Digital Learning Magazine, 2015).

This becomes important in India where only 12 per cent of the addressable population goes to college and nearly 70 per cent of the population is in rural areas, education is considered a very important channel for socioeconomic mobility. Unfortunately, despite huge demand and need of education, policy framework in India has stifled access, quality and innovation in education. Even the traditional education companies are gaining an entrepreneurial mindset and are seeking a share of the growing and evolving education market (Digital Learning Magazine, 2015).

A recent survey on Linkedin regarding 'what is the biggest constraint in setting up a 'high quality' academic institution in India' revealed that regulatory mechanism is the biggest constraint, followed by investments/funding. Some Indian education entrepreneurs are sensing the opportunity and are aggressively finding niches, models and structures that fall outside the regulatory mechanism (Digital Learning Magazine, 2015).

Puranam Pradeep, Picasso, Founder Imbue desk says, "This is very common hurdle in young startups who got a team of all talented youth to make them sit together, plan together and then make them work together without disturbing their individual thoughts, freedom and actions. It took us a lot of time, around five months, to finalize a particular action plan of how to implement in as sequential manner for overall development of students" (Digital Learning Magazine, 2015).

Abhishek Ahlawat, Founder, studytonight.com says, "India has a huge market in the education domain. Especially in the higher education segment, where there are more than 5,000 engineering and management colleges, with nearly 800-1,000 added every year, the market is close to 6+ million students going for either higher education or campus placements annually. This translates to at least $600 million opportunity. There are specific education hubs in the country, with large number of institutions and universities, which are our primary focus" (Digital Learning Magazine, 2015).

3 Literature review: the Growing Field of Edupreneurship

Many authors and researchers have written into the subject of Educational Entrepreneurship, commonly known as Edupreneurship. Some prominent studies on edupreneurship are being detailed hereunder sequentially.

Somaiah Malathi (2003) paper "Private Sector Participation in Education Services" highlights the 'Issue of Education as Investment' and quality control on teaching and learning methods. How the quality of education is linked with the cost of education? How ROI is linked with social responsibility? Setting up colleges in rural and tribal areas would be expensive undertakings. In the developed economies like US, Canada and Europe, 55 to 70 percent of the population (18- 22 years old) attend college whereas this figure is 6 to 7 percent in India. This small percent is quite big due to population size. Large numbers of students aspire for higher education in India. This huge demand pushes the private sector to participate as a commercial venture and not as a welfare activity. The paper also discusses whether to allow highly reputable institutions of the world to provide educational services on Indian soil.

The analytical paper "Equity, Quality and Quantity in Higher Education" in 2004 by Dr. Anandakrishana M. (2004) says that rapid expansion in the number of higher educational institutions and their higher intake capacity has lowered their quality of education. The agencies responsible for promoting

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expansion of educational institutions have not paid sufficient consideration to the developmental principle of education in rural sectors and service to society.

Agarwal Pawan (2007) in his paper “Private Higher Education in India: Status and Prospects” observes that India has the largest number of higher educational institutions (more than 18,000 in July 2007) in the world. This was four times higher than U.S. or Europe and seven times than China. India spent 0.4 percent GNP on higher education for two decades and therefore funding in higher education in India was limited. He found that in 2007, the expenditure on higher education by private sector was as high as 50%. Private spending on higher education and on professional education has increased significantly since then.

Bhattacharjee Mrinmoy (2008) in the paper 'Strategic Management in Higher Educational Institutions: Emphasis on career orientation in Management & Technical Institutes' focuses on self-financed, as well as government institutes, especially in the field of management and technological education in shaping Indian economy. It also highlights different strategies of such institutes viz. event-focused, career-orientation driven, short-term approach to learning, facility-related, workshops, seminars etc. It observes that private educational institutes managed by edupreneurs perform better than the Government or Semi Government sectors on the above parameters.

Basu Kaushik, C. (http://m.businesstoday.in/story/profit-cancoexist-with-quality/1/4603. html, Sept. 9, 2009) in the article “Profit can coexist with quality” explores methodologies to assessment and quality assurance in higher education including universities. New systems were highlighted for measuring performance, relationship & efficiency. Input and output indicators for missions of universities were developed to explore: teaching, learning, production of knowledge in patents and licensing & research, entrepreneurship-management etc.

In the paper “The impact of entrepreneurial capacity, experience and organizational support on Academic Entrepreneurship” authors Clarysse, Valentina Tartari & Ammon Salter (2011), tried to answer how the social factors influence to accept the academic decisions to be incorporated in entrepreneurial activities? Authors studied factors like social environment (supportive or critical), entrepreneurial capacity and entrepreneurial experience to analyze the success of enterprises.

Petra Gibcus, et al in their paper 'Effects and impact of entrepreneurship programs in higher education, Brussels, (March 2012)' studied the impact of entrepreneurship education programs provided by the government agencies or the higher educational institutes on the individual’s intentions towards entrepreneurship, the entrepreneurship key competence, society and the economy, the individual's employability etc. Authors observe that entrepreneurship education is useful for the students to opt entrepreneurship as a possible career option and their ability to turn ideas into actions. The paper concludes that study in Educational Leadership is not an academic or esoteric exercise but it has a significant role in training and developing leaders who will exercise their leadership activities for the betterment of societies.

Agrawal Reena (2013) belonged to a family of entrepreneurs. She preferred a totally new area of education and became an Edupreneur. She found that most of the educational institutes are not social service ventures but turned into educational factories where only number matters and not the quality of education. She opines that there is an ardent need for persons who have entrepreneul mind and social sensitivity to bring about a change in educational sector. She says that the syllabi and the course content being delivered in universities is obsolete and has to be upgraded in consultation with the industry veterans.

Entrepreneurship on a mass scale is the key for rural development and sustainability. All the above studies are in favor of entrepreneurship in education sector. Edupreneurs combine higher education with entrepreneurship and create a vibrant and flexible learning environment in higher institutes to contribute employment generation and to develop true professionals for the industry.

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4. Inclusive growth

Inclusive growth is possible when the growth of all sections of society is taken care of. An education system catering to the elite sections due to sheer logistics of cost and distribution mechanism is an anathema in the present day technological society. Entrepreneurship on a large scale is a key to promoting affordable and quality education to the Poor. Strengthening the infrastructure at the village level and embracing technology in a big way will help reduce the chasm between the elite and deprived sections of the society. God has given the faculty of mind to one and all equally. Let us not distort the development of brains on logistic considerations. When technology is available handy, why not use it for the betterment of the society?

5. Edupreneurship in rural areas

Affordability and accessibility of education are key to mass literacy and inclusive growth in rural India. Around 70% of the population lives in rural areas and the quality, quantity, affordability and accessibility of educational inputs are still a mirage. It is not that the government is not doing anything but the paucity of innovation and entrepreneurship in education sector in the face of high costs of distribution that matters much for understanding the malady. An attempt is being made here to understand the existing opportunities for the rural people and suggest possible innovations in the educational front for a meaningful inclusive growth.

5.1 Entrepreneurship for Sustainable Rural Development

Sustainable development is a dynamic and evolving concept with many dimensions and interpretations and reflects locally relevant and culturally appropriate visions for a world in which the term "Sustainable Development" indicates "the aspects of development which meet the needs of the present without compromising the ability of future generation to meet their own needs" (Gaur 2013).

The goal of sustainable development is so enormous, complex and complicated that it requires strategy interventions at various levels and in various sectors of society. An effective strategy for achieving sustainable development would need to have several components – political will; comprehensive legislation; public participation; access to technology, finances, education; research and experimentation. Education is one of these many tools and has been recognized as an indispensable part of sustainable development strategies.

India is enriched with human resources and the village ecosystems. The development to be sustainable must be based upon these resources. Sustainable development is essential for removing disparity, bringing equity, promoting harmony in the society and between humanity and environment. For realizing the goal of rural sustainable development, availability of skilled human resource in different areas is a pre-requisite. Skilled human resource will be needed for rural energy technology (biogas, rural energy plantation, fuel crop production, solar energy technology); rural informatics management; agro and social forestry and reclamation of waste land, medicinal plants, horticulture, water harvesting, soil conservation, organic manures, bio-fertilizers, neem-based pesticides, rural reconstruction technology, rural infrastructure development, agro-based industries and food processing, animal husbandry, dairy technology, maintenance of agricultural implements, animal power-based machineries, irrigation system, transport services, rural industries and other emerging and need-based rural technologies.

The future requirement of economic growth and technological development would generate a much greater demand for middle-level skilled human resource. Global technological changes will also catalyze the need for skilled human resource in each sector of economy particularly in the service sector. Vocational education program needs to be geared up to fulfill this enormous demand. India, with rich natural and human resources can achieve more prosperous and sustainable future through effective implementation of vocational education programs (Gaur 2013).

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5.2 Promoting Adoption of New Technology

Encouragement should be provided to the development of indigenous rural technology as well as for the adoption of newer technologies. There are many indigenous technologies available in India, which need to be intellectually protected and commercialized. At the same time, we have to realize the need for replacement of outdated technologies with the modern technologies. There is also need to set up Institute of Rural Technologies for the development of rural areas. The adoption of new technologies implies the need for educational enhancement and human resource development.

We should not forget that our heritage of technological treasure is very rich. The hand made products of the 'Garhia Lohar' are still better than many modern products produced through use of modern technological know-how. Have we ever thought of the need to revive the technology or to upgrade it? It is a common practice to use the phrase "poor fellow" for the artisans like "Garhia Lohar" and thus to ignore their utility in the present context. If we continue with this attitude such sections of our rural society will always remain poor. It is high time that we think of these issues quite seriously while planning a strategy for self-reliant villages (Gaur 2013).

5.3 Need for Promotion of Grassroots Level Innovation

In addition to the vast resources of the useful knowledge available in our traditional wisdom, there is a tremendous scope for evolving a number of indigenous technologies through the encouraging efforts to undertake grassroots level innovations with students in village schools as the architect innovators through formation of hobby clubs, interest groups, etc. One among many examples, which may be cited in this context, is where a rural youth thought of finding out an alternative technology to plough such small holdings where a tractor could not operate. He had a motorcycle and added a third wheel to it with the attachment of a small cultivator. It was such a big success that the entrepreneurs from within and outside India contacted him for the copyright of the technology. Many such examples can be cited. It is high time that we promote and develop such grassroots level technology by encouraging creativity, grassroots innovations, and skills creation right from the village stage (Gaur 2013).

5.4 Imperative Need for Rural Employment Generation

It is pertinent to note that with the increasing trend of the diminishing size of land holding, a time will come in the near future when our village economy will have to go back to the traditional system of cow based dairy and bullock based farming and transport system. In a way that will be a blessing in disguise as it will save our future generations from the disaster of health hazards caused by polluted air and malnutrition. In terms of the requirements of the energy consumption at the village level replacing the machines by cattle will not be a losing proposition as it will give a new boost to dairy industry and open new avenues for the optimum use of conventional sources of energy like gobar gas. The production and promotion of cattle wealth particularly the cows will prove to be a boom to the health care aspect of our village communities. In fact there is a need for involving the constituents of the village school, namely the teacher and children to prepare a survey report on the most suited cropping patterns, crop mix suited to local conditions and advocating to the village community member to transforms to taking up activities like organic forming which would generate higher incomes from small – sized holdings. Besides, they should also be actively preached and counseled through the medium of village school to take up the cultivation of oil plants, e.g. jojoba, herbs machined plants, etc. used in cosmetics and medicines in the town/city area of our country.

Promotion of rural entrepreneurship is a key to eradicate rural poverty. Rural entrepreneurship can be undertaken using the materials that are locally available and cheap. Rural entrepreneurship can be made by the citizens of the village itself or by other private agencies. It can create off-farm job opportunities for the rural people and increase their income. Mostly, it can be an additional source of income over and above their farm income. This requires creating an industry-friendly environment. The people shall be

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made aware of the merits of such large enterprises in their own village, how they are going to be benefited out of that, how they can make the best use of that etc. For example, small and medium enterprises can provide job for the poor. But when it comes to large formal firms, firstly, the level of education itself can prevent the rural poor from entering into jobs. Secondly, there will be lack of sufficient information on the jobs for them. The educated middle class may be able to manage. Again, there is every chance that the rural poor are left behind. This shows the need to educate the rural masses and establish information centers in the panchayats (Gaur 2013).

6. The current scenario

The National Sample Survey Organization (NSSO) defines 'rural' as follows:

- An area with a population density of up to 400 per square kilometer,
- Villages with clear surveyed boundaries but no municipal board,
- A minimum of 75% of male working population involved in agriculture and allied activities.

By this standard we have six lakh plus villages and majority of the villages have accessible education in the sense that there are primary schools catering to the poor and needy. Since the scope of the article is just to suggest certain innovations in the education sector for inclusive growth, we are not going in to the delivery and distribution aspects of education. To encourage attendance and prevent the 'drop-outs', the central and the state governments have been adopting various schemes like midday meal scheme in a big way. Technology has been roped in by way of audio- video lectures, TV coverage and AIR PROGRAMS etc. The initiatives are laudable in encouraging primary education. The 86th constitutional amendment making education compulsory up to 14 years and the legal provision banning child labor (India's 1986 Child Labour Act) have brought about significant improvements notwithstanding the fact of poor implementation of legal provisions.

The crux of the problem is higher education. We are contributing to literacy but we have shown less importance to sustainability. Much improvement has not been done at the altar of higher education. We have around 560 universities with a population of more than 120 crores as against 2000 plus universities in USA for a population of around 32 crores. The primary education imparted at schools is making children enough literates to read and write and nothing more. University education is still a big cry in view of the distribution costs. The grown up children are becoming unemployable. The tag of 'literate' is preventing many parents to push their children to agriculture related activities. The children are also shying away in doing farm activities and preferring labor work in factories.

6.1 What ails higher education?

The meritorious and the elite both from urban and rural areas are gaining access to elite institutions like, IIMs, IITs, RECs. The less meritorious from the lower middle class and the below poverty line (BPO), on the other hand, have access to medium or sometimes mediocre institutions which can guarantee nothing more than university degrees. By this process a horde of non-employable or under-employable literates are emerging out of the social system. Affordability and accessibility to quality education is missing for the bottom of the pyramid population.

6.2 Can innovation help?

In the post liberalization and globalization regime, we witness a few entrepreneurs in education (edupreneurs) starting educational centers of excellence and built big universities and colleges. But their horizon is less concerned for the objective of spreading the gospel of higher education to less affordable sections of the society.

7. Conclusion: What is to be done?

Social entrepreneurship in the educational arena has its advantages of generating profits with a social

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motto of serving the BOP segments of the society. Widespread use of technology and innovations hold the key to achieve this objective. A few social entrepreneurs like Coursera, Khan Academy and edX already revolutionizing the contours of the education of the 21st century. These are to be encouraged in a big way.

Some elite institutions like IIM, Calcutta and IMT, Ghaziabad have started offering courses through on-line video lectures through the interface of institutions like NIIT. Their range is now restricted since their depth is urban centric. The government should take initiatives to make use of Satellite Technology in propagating massive open online courses (MOOCs), and allow free access to training from the top universities to the BOP segment of the population. The Village Panchayat should be equipped with necessary infrastructure to take care of MOOCs.

Integrating the libraries of elite universities of the country has to be taken up in a big way and accessibility to digital books be made available in all village panchayats. This act help students to access books at no extra cost and encourage them for higher learning.

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DETERMINANTS OF INNOVATION IN THE REGION OF MENA

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Abstract
This paper investigates determinants of innovation in MENA (Middle East and North Africa) countries. Based on existed researches, GDP per capitol (PPP), higher education enrollment, corporate governance, economy openness and unemployment rate are studied. The paper used Global Innovation Index (GII), patent applications and high technology exports as dependent variable in separate models. Panel regression is applied in the study. The result indicates that in MENA region, all the above four factors except unemployment rate are determinants in regard to innovation, and it is also shown that patent application by residents is a better proxy for innovation. This study is organized in the following format: first part is introduction, followed by literature review for the second part; part three is data and methodology, then part four presents results and discussion; finally, it is the conclusion and future research.

Key words: innovation determinants, GII, patent application, MENA countries, panel regression

Introduction

1.1 Innovation

Innovation is a hot topic today and plays a key role all around the world. It serves as solution to challenges facing our life and effective tool to satisfy enlarged demands from our human beings. Innovation could be the creation of new technology, or a new business model.

An important part of economic change is innovation, which together with entrepreneurial activities and market power, playing critical roles in economic change (Schumpeter,1934). Monopolies are created because of technological innovation, which further brings abnormal profits, and provides incentives in developing new products. Innovation is a process of risk taking concurrently to some degree. For more profits or a new market, organizations would like to take the risk in their innovative activities, which are either revolutionary technologies or creative products. However, compared to hand and price competition, this kind of technological innovation, or market power originated from innovation, can be more effective and bring better results (Schumpeter,1934). Technological innovation is not necessary a business success except it identifies customers' needs and meets these needs, or in other words, it finds out value and delivers value to the customers (Teece, 2010). Innovation is such a process that could transfer a new idea or invention into either goods or service, which brings value to customers who would like to pay for the value. Maranville (1992) argued innovation serves as a better solution so as to satisfy either existing market needs or new requirements.

Innovation is a complex of new products, processes, ideas and service. It includes not only original invention, but also creative implementation (Kant, 1997). Also, innovation is identified as both outcome and process, is defined as production or exploitation, which could be new methods of production, new market and management systems (Crossan and Apaydin, 2010).

In a business context, it brings innovation to better meet customers' expectations and demands. In a social context, creation of buyers' purchasing power, flexible working hours, new forms of alliance, joint venture, may be connected with innovation. Drucker (2002) argued that innovation could be new wealth created by entrepreneur, or endowment enhancing wealth producing to existing resources. In his view, innovation originated from public service, business practice, or even an individual's family kitchen. He believed entrepreneurship is the soul of innovation (Drucker, 2002).

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In an organization context, innovation helps positive changes in productivity, market share, competitiveness and performance improvements (Salge and Vera, 2012). West (2002) indicated that both performance and profits would be enhanced within an organization with innovation resources and work opportunities.

1.2 Innovation vs invention

Innovation and invention are not the same even though they are close concepts. Invention is the "creation of a product or introduction of a process for the first time" (Bhasin, 2012). However, "innovation happens when someone improves on or makes a significant contribution to something that has already been invented" (Bhasin, 2012). Invention is most likely originated from experiments or studies and in a sense to be brand new creature which did not exist before. This kind of invention could include not only any newly released products, but also a discovery, or even musical composition.

Morgan (2015) wrote that "invention creates an ability, but innovation takes that ability and allows it to scale and create some kind of a market impact." Although the two concepts are overlapped easily, the sense of innovation is more like a change which made to an existing idea, product or field. He argued that Google Glass, for instance, was an invention; while Apple iPhone was an innovation. In Morgan's view, innovation would be more market oriented, meaning that an innovation generally will bring a positive impact in the market, and this innovation is a practical implementation of invention.

1.3 Innovation input and output

Innovation inputs are those elements of the national economy that enable innovative activities. Innovation outputs are the results of innovative activities within the economy (Global Innovation Index 2018 Report).

The Global Innovation Index (GII) measures the innovation inputs with five enabler pillars: Institutions, Human capital and research, Infrastructure, Market sophistication, and Business sophistication. Enabler pillars represent all the dimensions in a country's innovation activities. There are two output pillars as well: Knowledge and technology outputs and Creative outputs. Each input or output pillar is further included three sub-pillars, which compose 80 different individual variables in total for the year (Cornell University, INSEAD and WIPO, GII Report 2018).

1.4 Types of Innovation

OECD (Organization for Economic Co-operation and Development) defines innovation broadly including process, methods (either marketing or organizational), together with traditional perceived product and service in existing organization and business; all of these are either new implementation or at least improved significantly compared to the current occurrence (Eurostat and OECD, 2005).

This is an indication how the concept of innovation has been developed from only the narrow understanding of R&D based technological product innovation in past time to current non-R&D innovative service and business model as well. The tradition innovation was most in manufacturing field with necessary technological breakthroughs; it was more perceived to be determined by new technology exploiting. However, innovation today is expanded to both innovations with research or non-research.

1.5 Innovation measurement

All the innovation factors with necessary adjustments are continually evaluated in every year's Global Innovation Index, which presents more than 90% of the world's population and the world's GDP (in current US dollars). Detailed innovation metrics for most nations are disclosed in the GII annual report. The GII report is composed of four measures: the overall GII, the Input and Output Sub-Indices, and the Innovation Efficiency Ratio. The overall GII score is the simple average of the Input and Output Sub-Index scores. The Innovation Efficiency Ratio is the ratio of the Output Sub-Index score to the Input

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Sub-Index score; It discovers nations' innovation from aspects of its investment and achievements as well (Global Innovation Index 2018 Report). There is reviewing and updating to every year's GII variables to indicate the newest trend in terms of global innovation.

1.6 Middle East and North Africa

Based on classification from the World Bank, the Middle East and North Africa (MENA) region includes 21 countries: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, West Bank and Gaza, and Yemen (World Bank Definition: MENA. Worldbank.org).

45% of the world's natural gas reserve,60% of the world's oil reserve and 6% of the world's population is in the MENA region. 12 OPEC nations are mostly MENA countries, which are key players as petroleum suppliers in today's world.

With an average growth of 2.6% in year 2019 to 2020, MENA region is expected to improve its economics modestly by oil exporters in a higher oil price related to external oil demand (worldbank.org/en/region/mena).

Literature review

2.1 Schumpeter's innovation theory

Schumpeter believed innovation brings change, which is also a historical process of development, with the core value of dynamic entrepreneur (Schumpeter, 1912). There are five types of innovation during this development process: "1. Launch of a new product or a new species of already known product; 2. Application of new methods of production or sales of a product (not yet proven in the industry); 3. Opening of a new market (the market for which a branch of the industry was not yet represented); 4. Acquiring of new sources of supply of raw material or semi-finished goods; 5. New industry structure such as the creation or destruction of a monopoly position" (Schumpeter, 1934).

He argued that innovation depending on economic current mean productive suppliers, can contribute to profits (Schumpeter, 1934). In his analysis, innovation creates change and brings destruction. It is a "process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one"(Schumpeter,1942).

Schumpeter's most distinctive contribution to economics are probably the concepts of innovation and entrepreneurship (Hanush and Pyka, 2007). Schumpeter viewed economic growth cycles occur because of innovation fluctuation (Rosenberg,1994). Schumpeter referred innovation to "neighborhoods of equilibrium", which is certain points in time periods when innovation clustered around, and then entrepreneurs took the risk providing warrant innovative commitments; finally, this equilibrium generates accelerated growth in a long round (Rosenberg,1994)

2.2 Disruptive Innovation of Christensen

Christensen (1997) classified two categories of innovation as being sustaining and disruptive. Sustaining innovation usually does not alter the current market and may improve the existing products, not always bringing a new product (King and Baatartogtokh, 2015). On the other hand, disruptive innovation creates new product and a market niche (Christensen et al.,2015); it leads to a new trend in the market by replacing the current products.

Further, Christensen believed that to those existed successful companies with steady customers, excellent development and research, disruptive innovation could be a threat in the sense that growth space is limited, and profit margin is tight as well in the ignored market most susceptible to disruptive innovation by those established companies (Christensen, 1997).

3. Methodology and data

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3.1 GII report (2018)

Global Innovation Index (GII) annual reports tightened innovation indices with economic growth, which usually represented by GDP per capita.

"GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources" (World Bank, International Comparison Program database).

Education quality plays a key role in a country's innovation activities. Tertiary education, whether research originated or not, having strict admission requirement and being expected to accomplish education in an advanced level, is an important determinant of a nation's innovation capacity, which raises the value chain from the lower level through higher technological products processing. Tertiary education is also an indicator in terms of human capital and research. Tertiary gross enrollment ratio "is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown" (UNESCO Institute for Statistics).

The institutions pillar in GII report represents a nation's institutional framework, which is crucial for attracting business and economic growth. Good governance is essential to innovation ensuring this kind of institutional framework with appropriate business protection and incentives.

We have several indicators regarding corporate governance; for example, GII includes a percentage variable of working females who have higher education degrees to investigate business sophistication, which is one of the five pillars in measuring innovation inputs in GII. Similarly, we prefer to use indicator of firms with female participation in top management (% of firms). However, because of too much missing data to some countries, business extent of disclosure index instead, is used as a proxy for corporate governance in our model. Disclosure index "measures the extent to which investors are protected through disclosure of ownership and financial information. The index ranges from 0 to 10, with higher values indicating more disclosure" (World Bank, Doing Business project).

In GII, ease of starting a business is an indicator in measuring business environment, or economic openings in regard to institution from the business aspect. Similarly, time required to start a business (days) is applied in our research.

Finally, unemployment could possibility be a factor influencing a nation's innovation level. It refers to share of the labor force available for and seeking employment but without job for the time being.

In terms of the dependent variable, innovation, patent is broadly used in measurement of innovation. Similarly, patent applications (by residents) is applied in our research. Patent applications are "worldwide filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention--a product or process that provides a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years" (World Intellectual Property Organization (WIPO), WIPO Patent Report).

However, Chambers (2016) argued that patent is not a good proxy for innovation. Therefore, as an alternative, either GII score or high-technology exports (in current US$) are used as indicators for innovation.

3.2 Propositions

Based on above literature, we have the hypotheses as following:

H1. GDP per capitol is one of the determinants in terms of innovation;

H2: higher education rate is in explanation of innovation;

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H3: economic openness (time required to start a business --days) explains innovation;
H4: corporate governance (business extent of disclosure) plays a role in innovation;
H5: Unemployment rate is also a determinant in innovation.

3.3 methodology and data

Multiple regression and panel regression analysis are applied in the research. As mentioned, the model is generally expressed as:

$Y1= \alpha + \beta1\ X1 + \beta2\ X2 + \beta3\ X3 + \beta4\ X4 + \beta5\ X5 + \varepsilon$, where: (1)

Y1: = innovation, in this model, is Patent applications by residents.
X1: = GDP per capita, PPP (current international $).
X2: = School enrollment, tertiary (% gross).
X3: = Time required to start a business (days), which serves as a proxy for economic openness.
X4: = Business extent of disclosure index (0=less disclosure to 10=more disclosure), in measuring corporate governance.
X5: = Unemployment, total (% of total labor force).

In the consideration that patent is not a good proxy for innovation, we replace the patent with either GII score or high-technology exports as indication for innovation, and then we have alternative models as following:

$Y2= \alpha + \beta1\ X1 + \beta2\ X2 + \beta3\ X3 + \beta4\ X4 + \beta5\ X5 + \varepsilon$, and: (2)

$Y3= \alpha + \beta1\ X1 + \beta2\ X2 + \beta3\ X3 + \beta4\ X4 + \beta5\ X5 + \varepsilon$. where (3)

Y2: = Global Innovation Score;
Y3: = High-technology exports.

Most data are coming from the World Bank database. Five to ten years period which started back to 2008 and/or 2013 and ended in 2017. In the consideration of missing data and the accuracy of the panel regression analysis, such a long period of ten years makes sense in the research.

4. Results and discussion

4.1 Results

Based on the three models mentioned above, we ran several panel regressions separately. In model one, patents by the residents is an indicator for innovation. As shown in table 1, which a five-year panel regression when patent is serving as indicator for innovation, we have the following results:

$$Y1 = -5262.775 + 0.068\ X1 + 45.72\ X2 - 0.168\ X3 - 57.486\ X4 + 338.73\ X5 + \varepsilon$$

t	0.907	1.694	-0.003	-0.706	2.441
p	0.372	0.101	0.997	0.486	0.021

R-square: 0.990 Durbin-Watson stat: 1.763
Adjusted R-square: 0.985

The R square and R square adjusted values look good. Durbin-Watson statistic is also good, implying low possibility for auto-correlation statistic and p-values for school enrollment-tertiary and total unemployment rate are significant, which verifies Hypothesis 2 and Hypothesis 5. However, the positive correlation between unemployment and patent is a little bit abnormal; further, beyond our expectation, the t statistic and p value for GDP is insignificant, which rejects hypothesis 1.
In a second observation, when GII score is a proxy for innovation, we can find in table 2:

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$$Y2 = 42.458 - 0.0004\,X1 + 0.0111\,X2 - 0.0871\,X3 + 0.3988\,X4 + 0.871\,X5 + \varepsilon$$

t	-1.818	0.155	-0.576	1.404	1.835
p	0.078	0.877	0.568	0.169	0.075

R-square: 0.981 Durbin-Watson stat: 2.079
Adjusted R-square: 0.971

It shows good R square and R square adjusted values; Durbin-Watson statistic in the amount close to 2 is better compared to the first model. GDP is now a determinant of innovation (GII) with a significant t statistic and p value. However, the negative correlation still expresses problem, which is possibly because of the insufficient data sets.

The results get better when there are more data used in the panel regression analysis. As shown in table 3, which has ten years instead of the previous five years data, we have the results as follows:

$$Y1 = -3301.034 + 0.0865X1 + 25.074\,X2 + 122.396X3 - 84.663X4 - 5.915\,X5 + \varepsilon$$

t	2.301	2.043	4.590	-1.338	-0.106
p	0.024	0.045	0.000	0.185	0.916

R-square: 0.984 Durbin-Watson stat: 0.976
Adjusted R-square: 0.979

Now almost all the independent variables except unemployment are significant in both t statistics and p values. Coefficients for GDP and school enrollment-tertiary are now positive, which are agreeable with our common sense and, in general, all the four hypotheses except hypothesis 5 are verified hereby.

In addition, we can also find similar progress when data increase from five years to ten years in case of high-technology exports serving as innovation indicator. In table 4 (see Appendix), none of the independent variable is significant. However, in table 5 (see Appendix), which is a ten years period, we find GDP, time required to start business and unemployment are all significant factors in determining innovation (high tech exports). Besides, it makes sense that unemployment rate is a negative coefficient value.

4.2 Discussions

As shown in the above multiple regressions results, we may think either Patent applications by residents or high-technology exports would be the appropriate proxy for the innovation, which is expresses as in Model 1 and Model 3. However, as the results shown in Table 3, unemployment rate seems to be insignificant when patent application is used as proxy. Furthermore, in Table 5 while high technology export is the innovation indicator, the school enrollment-tertiary is both negative and insignificant, which is against our common sense, even though now the unemployment is significant with a negative sign.

Based on these results, we further run the two models, model 1 and model 3, when dropping the unemployment rate. As shown in Table 6, when used patent application as proxy for innovation, now all the four independent variables keep significant:

$$Y1 = -3378.757 + 0.0876X1 + 25.093\,X2 + 122.664X3 - 86.349X4 + \varepsilon$$

t	2.443	2.059	4.652	-1.419
p	0.017	0.043	0.000	0.160

R-square: 0.984 Durbin-Watson stat: 0.980

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Adjusted R-square: 0.980

Both the adjusted R square and Durbin-Watson Statistics improved. Specifically, as shown in table 7 (see Appendix), when high technology exports is the dependent variable and drop the unemployment from the model, all the other four independent variables, including school enrollment-tertiary, are significant now. Also, in table 8 (see Appendix), we find that all the independents' significance improved when there is no unemployment rate added. Therefore, we may drop unemployment from the model.

So far, we have two indicators for innovation, patent applications by residents and high technology exports; however, when we look at values of R square and adjusted R square from Table 6 and Table 7, we can clearly find the R square values are less when using high technology exports. We may conclude hereby that patent application by residents would be a better proxy compared to high technology exports. Besides, we have additional information in regard to innovation among the countries in the same region. Based on GII 2018 report, there is huge imbalance in terms of innovation among the countries. All the patent applications for the years between 2008 and 2017 in five random selected countries: Algeria and Bahrain are almost in the same very lower level, only few applications for the period; then is Egypt, better than those two countries, but less than Israel; we can see the huge gap between Iran and Israel; applications in Iran is very higher than all the other four countries, even though the line is fluctuated and it dropped to the bottom in the year of 2012.

In terms of high technology exports, again we find the similar imbalance among the five countries as shown in figure 1. Israel has much more high technology exports (in US Dollars) than other four countries.

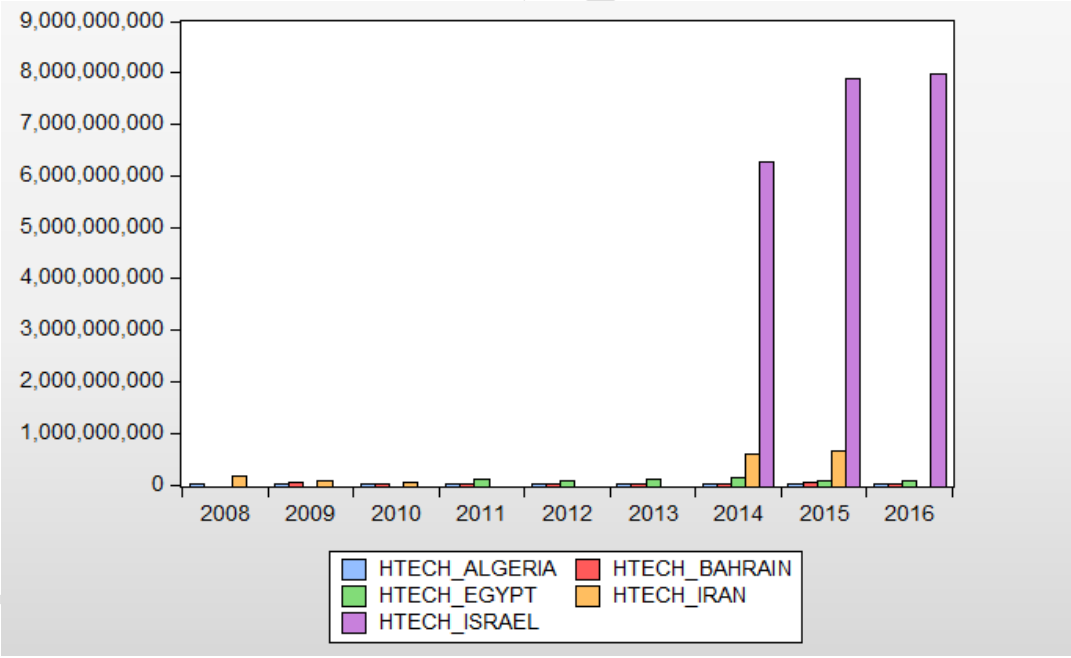

Figure 1: high technology exports among five countries

Besides the imbalance among countries in the MENA region, the Global Innovation Index 2018 published the newest report, which provides us the GII score for all the regions in today's world. As shown in Figure 2, the GII score in MENA is 34, which is ranked the fourth after North America, Europe and South East and East Asia regions, but a higher score than regions of Latin America, Sub-Saharan Africa and Central and South Africa.

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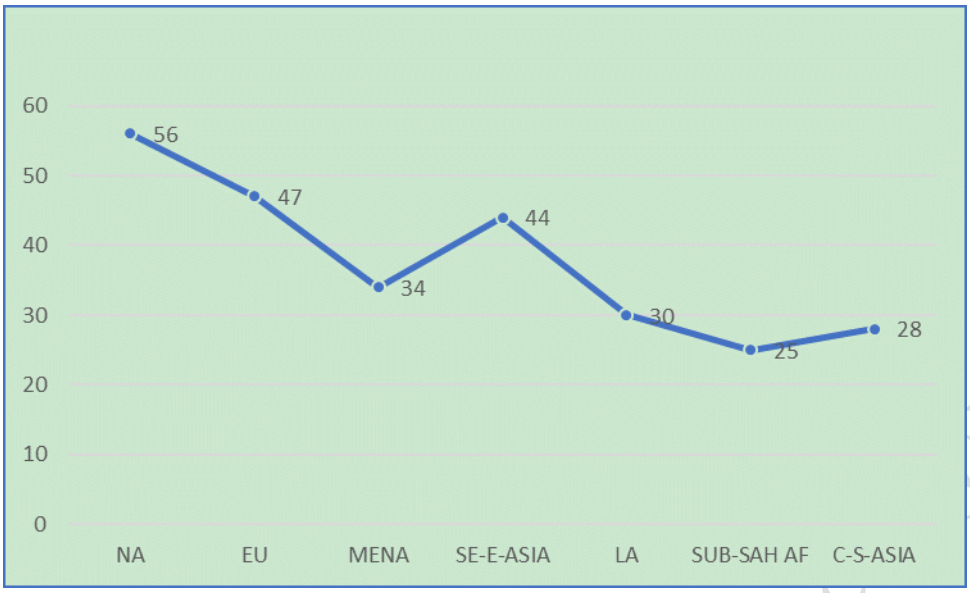

Figure 2: GII Scores among regions (2018)

According to GII 2018 report, Israel (11th) and Cyprus (29th) are the top two nations in innovation in the MENA region for six consecutive years. Israel makes the striking upward move stepping up by six while Cyprus moves up by one. The United Arab Emirates (38th) is in the third place in innovation even though it really moves down by three places.

In addition, there are many GII score Top 100 countries as well: Qatar (51st), Kuwait (60th), Saudi Arabia (61st), Iran (65th), Tunisia (66th), Oman (69th), Bahrain (72nd), Morocco (76th), Jordan (79th), Lebanon (90th), and Egypt (95th). Egypt moves up by 11 places in the overall GII ranking, therefore makes the most regional progress. Algeria (110th) and Yemen (126th), however, are still below the top 100.

5. Conclusion and further research

In this paper, we try to investigate innovation in the region of Middle East and North Africa (MENA). Based on current literature, we have GII score, patent applications by residents and high technology exports as possible proxy for innovation. However, limited by the data availability, in a series running of panel data, patent application by residents serves as a best indicator for the innovation. Hypotheses are developed as five independent variables of GDP per capitol,PPP, tertiary school enrollment, economic openness, corporate governance, and unemployment rate of total labor force being potential determinants. However, as shown in the multiple regression results, all the other four hypotheses are verified except unemployment as a significant factor in terms of innovation. It may be possible indirect correlation between unemployment rate and innovation, in the consideration that generally a relative low unemployment indicates a better economy, which may benefit the innovation activities; but in my research there is no sign of the direct connection.

Regarding future research, we may study this phenomenon in other regions separately. Will there be the same or similar results, or will there be different factors in determinant of the innovation? As a whole picture, when applied to the whole world in studying innovation, will there be a series of common determinants and different factors existing as well? These may be the future topics in the area.

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Appendix: Eviews Panel Regression Tables

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Dependent Variable: PATENT?
Method: Pooled Least Squares
Date: 12/05/18 Time: 10:57
Sample (adjusted): 2013 2016
Included observations: 4 after adjustments
Cross-sections included: 13
Total pool (unbalanced) observations: 46
Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5262.775	2980.513	-1.765728	0.0883
GDP?	0.068002	0.074991	0.906801	0.3723
TERTIARYENROLL?	45.72033	26.97933	1.694643	0.1012
TIMESTARTBUSINESS?	-0.168421	46.40188	-0.003630	0.9971
BUSINESSDISCLOURE?	-57.48621	81.43198	-0.705941	0.4861
UNEMPLOYMENT?	338.7307	138.7895	2.440608	0.0212
Fixed Effects (Cross)				
_ALGERIA--C	-611.6503			
_BAHRAIN--C	237.7413			
_EGYPT--C	-145.5171			
_IRAN--C	11031.35			
_ISRAEL--C	-371.5724			
_JORDAN--C	-1573.860			
_LEBANON--C	710.7609			
_MALTA--C	-891.6291			
_MOROCCO--C	967.4640			
_QATAR--C	-3839.293			
_SAUDIARABIA--C	-1768.959			
_TUNISIA--C	-1892.953			
_UNITEDARABEMIRAT...	-884.1460			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.990887	Mean dependent var	1162.978
Adjusted R-squared	0.985354	S.D. dependent var	3289.549
S.E. of regression	398.0992	Akaike info criterion	15.09745
Sum squared resid	4437523.	Schwarz criterion	15.81301
Log likelihood	-329.2414	Hannan-Quinn criter.	15.36550
F-statistic	179.0928	Durbin-Watson stat	1.762822
Prob(F-statistic)	0.000000		

Table 1: Five years panel regression result when patent as indicator

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Dependent Variable: GII?
Method: Pooled Least Squares
Date: 12/05/18 Time: 10:38
Sample (adjusted): 2013 2016
Included observations: 4 after adjustments
Cross-sections included: 15
Total pool (unbalanced) observations: 55
Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.45807	9.269845	4.580235	0.0001
GDP?	-0.000376	0.000207	-1.818818	0.0775
TERTIARYENROLL?	0.011131	0.071568	0.155537	0.8773
TIMESTARTBUSINESS?	-0.087144	0.151361	-0.575736	0.5685
BUSINESSDISCLOURE?	0.398804	0.284008	1.404202	0.1691
UNEMPLOYMENT?	0.871040	0.474606	1.835289	0.0750
Fixed Effects (Cross)				
_ALGERIA--C	-22.24747			
_BAHRAIN--C	7.335622			
_EGYPT--C	-23.50669			
_IRAN--C	-19.37288			
_ISRAEL--C	17.89971			
_JORDAN--C	-20.40105			
_KUWAIT--C	24.26271			
_LEBANON--C	-11.60674			
_MALTA--C	17.43204			
_MOROCCO--C	-17.78009			
_OMAN--C	1.310596			
_QATAR--C	43.58369			
_SAUDIARABIA--C	11.06047			
_TUNISIA--C	-19.44843			
_UNITEDARABEMIRAT...	19.47502			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.981279	Mean dependent var	36.48436
Adjusted R-squared	0.971116	S.D. dependent var	8.344536
S.E. of regression	1.418175	Akaike info criterion	3.811906
Sum squared resid	70.39272	Schwarz criterion	4.541846
Log likelihood	-84.82743	Hannan-Quinn criter.	4.094180
F-statistic	96.55558	Durbin-Watson stat	2.079346
Prob(F-statistic)	0.000000		

Table 2: Five years panel regression result when GII as indicator

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Dependent Variable: PATENT?
Method: Pooled Least Squares
Date: 12/05/18 Time: 11:12
Sample (adjusted): 2008 2016
Included observations: 9 after adjustments
Cross-sections included: 14
Total pool (unbalanced) observations: 89
Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3301.034	1370.645	-2.408379	0.0187
GDP?	0.086498	0.037576	2.301936	0.0243
TERTIARYENROLL?	25.07444	12.27628	2.042511	0.0449
TIMESTARTBUSINESS?	122.3967	26.66787	4.589667	0.0000
BUSINESSDISCLOURE?	-84.66396	63.29397	-1.337631	0.1853
UNEMPLOYMENT?	-5.915406	55.84690	-0.105922	0.9159
Fixed Effects (Cross)				
_ALGERIA--C	-1018.105			
_BAHRAIN--C	-2063.550			
_EGYPT--C	1356.128			
_IRAN--C	11574.31			
_ISRAEL--C	-1128.565			
_JORDAN--C	439.1657			
_LEBANON--C	39.66025			
_MALTA--C	-4479.708			
_MOROCCO--C	1571.175			
_QATAR--C	-8733.962			
_SAUDIARABIA--C	-4102.512			
_TUNISIA--C	700.0674			
_YEMEN--C	1783.881			
_UNITEDARABEMIRAT...	-3407.195			

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.984029	Mean dependent var	1410.022
Adjusted R-squared	0.979922	S.D. dependent var	3594.576
S.E. of regression	509.3402	Akaike info criterion	15.49093
Sum squared resid	18159924	Schwarz criterion	16.02222
Log likelihood	-670.3466	Hannan-Quinn criter.	15.70508
F-statistic	239.6058	Durbin-Watson stat	0.976275
Prob(F-statistic)	0.000000		

Table 3: Ten years panel regression result when patent as indicator

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Dependent Variable: HTEC?
Method: Pooled Least Squares
Date: 12/05/18 Time: 11:52
Sample (adjusted): 2013 2016
Included observations: 4 after adjustments
Cross-sections included: 15
Total pool (unbalanced) observations: 54
Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.53E+09	2.55E+09	0.598421	0.5535
GDP?	-7133.562	54218.07	-0.131572	0.8961
TERTIARYENROLL?	-6175933.	19195213	-0.321743	0.7496
TIMESTARTBUSINESS?	-573699.9	36298532	-0.015805	0.9875
BUSINESSDISCLOURE?	47094136	70217007	0.670694	0.5069
UNEMPLOYMENT?	-30188287	95677429	-0.315522	0.7543
Fixed Effects (Cross)				
_ALGERIA--C	-1.05E+09			
_BAHRAIN--C	-1.24E+09			
_EGYPT--C	-1.10E+09			
_ISRAEL--C	9.46E+09			
_JORDAN--C	-9.05E+08			
_KUWAIT--C	-7.63E+08			
_LEBANON--C	-1.34E+09			
_MALTA--C	-1.86E+08			
_MOROCCO--C	-5.95E+08			
_OMAN--C	-1.08E+09			
_QATAR--C	-6.89E+08			
_SAUDIARABIA--C	-5.00E+08			
_TUNISIA--C	-2.84E+08			
_WESTBANKANDGAZ...	-6.99E+08			
_UNITEDARABEMIRAT...	-3.84E+08			

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.989487	Mean dependent var	1.07E+09
Adjusted R-squared	0.983612	S.D. dependent var	2.72E+09
S.E. of regression	3.49E+08	Akaike info criterion	42.45561
Sum squared resid	4.13E+18	Schwarz criterion	43.19228
Log likelihood	-1126.302	Hannan-Quinn criter.	42.73972
F-statistic	168.4285	Durbin-Watson stat	2.564083
Prob(F-statistic)	0.000000		

Table 4: Five years panel regression result when high tech as indicator

Dependent Variable: HTEC?
Method: Pooled Least Squares
Date: 12/05/18 Time: 11:42
Sample (adjusted): 2008 2016
Included observations: 9 after adjustments
Cross-sections included: 17
Total pool (unbalanced) observations: 121
Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.38E+08	7.48E+08	0.853245	0.3956
GDP?	42283.94	17303.98	2.443596	0.0163
TERTIARYENROLL?	-4298301.	9221374.	-0.466124	0.6422
TIMESTARTBUSINESS?	-19198212	13092993	-1.466297	0.1457
BUSINESSDISCLOURE?	29685720	44338051	0.669531	0.5047
UNEMPLOYMENT?	-93007716	38448449	-2.419024	0.0174
Fixed Effects (Cross)				
_ALGERIA--C	2.17E+08			
_BAHRAIN--C	-2.25E+09			
_EGYPT--C	3.21E+08			
_IRAN--C	7.30E+08			
_ISRAEL--C	8.26E+09			
_JORDAN--C	5.66E+08			
_KUWAIT--C	-2.83E+09			
_LEBANON--C	-3.51E+08			
_MALTA--C	2.19E+08			
_MOROCCO--C	8.43E+08			
_OMAN--C	-1.92E+09			
_QATAR--C	-5.76E+09			
_SAUDIARABIA--C	-1.43E+09			
_TUNISIA--C	1.20E+09			
_YEMEN--C	7.98E+08			
_WESTBANKANDGAZ...	2.51E+09			
_UNITEDARABEMIRAT...	-2.49E+09			

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.970586	Mean dependent var	8.61E+08
Adjusted R-squared	0.964347	S.D. dependent var	2.31E+09
S.E. of regression	4.36E+08	Akaike info criterion	42.78658
Sum squared resid	1.88E+19	Schwarz criterion	43.29491
Log likelihood	-2566.588	Hannan-Quinn criter.	42.99303
F-statistic	155.5615	Durbin-Watson stat	0.834952
Prob(F-statistic)	0.000000		

Table 5: Ten years panel regression result when high tech as indicator

Dependent Variable: PATENT?		
Method: Pooled Least Squares		
Date: 12/11/18 Time: 13:15		
Sample (adjusted): 2008 2016		
Included observations: 9 after adjustments		

Cross-sections included: 14				
Total pool (unbalanced) observations: 89				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3378.757	1149.594	-2.939088	0.0044
GDP?	0.087600	0.035857	2.443005	0.0171
TERTIARYENROLL?	25.09378	12.18915	2.058697	0.0432
TIMESTARTBUSINESS?	122.6641	26.36260	4.652959	0.0000
BUSINESSDISCLOURE?	-86.34894	60.83422	-1.419414	0.1602
Fixed Effects (Cross)				
_ALGERIA--C	-1016.975			
_BAHRAIN--C	-2031.671			
_EGYPT--C	1359.530			
_IRAN--C	11567.78			
_ISRAEL--C	-1119.631			
_JORDAN--C	431.9860			
_LEBANON--C	72.59780			
_MALTA--C	-4477.196			
_MOROCCO--C	1593.155			
_QATAR--C	-8793.465			
_SAUDIARABIA--C	-4108.269			
_TUNISIA--C	678.7663			
_YEMEN--C	1760.705			
_UNITEDARABEMIRATES--C	-3407.165			
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.984026	Mean dependent var		1410.022
Adjusted R-squared	0.980202	S.D. dependent var		3594.576
S.E. of regression	505.7812	Akaike info criterion		15.46862
Sum squared resid	18162835	Schwarz criterion		15.97194
Log likelihood	-670.3537	Hannan-Quinn criter.		15.67150
F-statistic	257.2826	Durbin-Watson stat		0.979958
Prob(F-statistic)	0.000000			

Table 6: Patent as innovation indicator without unemployment

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Dependent Variable: HTECH?				
Method: Pooled Least Squares				
Date: 12/11/18 Time: 13:46				
Sample: 2008 2016				
Included observations: 9				
Cross-sections included: 19				
Total pool (unbalanced) observations: 103				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.70E+09	1.08E+09	-7.137881	0.0000
GDP?	47814.86	7412.711	6.450388	0.0000
TERTIARYENROLL?	83451286	15049536	5.545107	0.0000
TIMESTARTBUSINESS?	-41914893	32938016	-1.272538	0.2069
BUSINESSDISCLOURE?	8.13E+08	1.27E+08	6.425672	0.0000
Fixed Effects (Cross)				
_ALGERIA--C	1.93E+09			
_BAHRAIN--C	-4.01E+09			
_DJIBOUTI--C	-4.53E+09			
_EGYPT--C	1.42E+09			
_IRAN--C	-8.00E+08			
_ISRAEL--C	3.48E+09			
_JORDAN--C	4.43E+09			
_KUWAIT--C	1.47E+09			
_LEBANON--C	-4.92E+08			
_LIBYA--C	-3.46E+09			
_MOROCCO--C	2.90E+09			
_OMAN--C	2.36E+09			
_QATAR--C	-1.14E+09			
_SAUDIARABIA--C	-3.06E+09			
_SYRIAN--C	-2.55E+09			
_TUNISIA--C	-4.39E+09			
_YEMEN--C	5.52E+09			
_WESTBANKANDGAZA--C	2.14E+09			
_UNITEDARABEMIRATES--C	2.28E+09			
	Effects Specification			
Cross-section fixed (dummy variables)				

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R-squared	0.879796	Mean dependent var	9.72E+08
Adjusted R-squared	0.846739	S.D. dependent var	2.48E+09
S.E. of regression	9.71E+08	Akaike info criterion	44.42040
Sum squared resid	7.55E+19	Schwarz criterion	45.00874
Log likelihood	-2264.651	Hannan-Quinn criter.	44.65870
F-statistic	26.61512	Durbin-Watson stat	0.464593
Prob(F-statistic)	0.000000		

Table 7: high tech as innovation indicator when dropping unemployment

Dependent Variable: GII?				
Method: Pooled Least Squares				
Date: 12/13/18 Time: 12:13				
Sample: 2013 2018				
Included observations: 6				
Cross-sections included: 16				
Total pool (unbalanced) observations: 55				
Cross sections without valid observations dropped				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.69868	2.489485	8.716132	0.0000
GDP?	0.000112	1.84E-05	6.096707	0.0000
TERTIARYENROLL?	0.084946	0.046499	1.826856	0.0763
TIMESTARTBUSINESS?	0.086973	0.070975	1.225403	0.2286
BUSINESSDISCLOURE?	0.917284	0.275532	3.329137	0.0021
Fixed Effects (Cross)				
_ALGERIA--C	-6.769157			
_BAHRAIN--C	-2.327518			
_DJIBOUTI--C	-3.944289			
_EGYPT--C	-8.960044			
_IRAQ--C	15.55355			
_ISRAEL--C	1.030482			
_JORDAN--C	-2.213776			
_KUWAIT--C	-3.411641			
_LEBANON--C	15.80851			
_LIBYA--C	-0.663793			
_MALTA--C	-3.221283			
_MOROCCO--C	-1.645878			
_OMAN--C	-4.734444			
_QATAR--C	2.710318			
_SYRIAN--C	3.193432			
_TUNISIA--C	-2.932100			

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	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.966593	Mean dependent var		36.48436
Adjusted R-squared	0.948459	S.D. dependent var		8.344536
S.E. of regression	1.894439	Akaike info criterion		4.391011
Sum squared resid	125.6115	Schwarz criterion		5.120950
Log likelihood	-100.7528	Hannan-Quinn criter.		4.673284
F-statistic	53.29997	Durbin-Watson stat		1.364051
Prob(F-statistic)	0.000000			

Table 8: GII as innovation indicator without unemployment

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A BIBLIOMETRIC ANALYSIS OF SCIENTIFIC PRODUCTION IN BRAZIL ON CORPORATE GOVERNANCE AND ORGANIZATIONAL PERFORMANCE

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ABSTRACT

The growth of corporate governance practices has intensified considerably in Brazil. The debate on the subject has gained strength. In addition, within the scientific field, there is evidence that proves, that the

use of good corporate governance practices influence the organizational result, directly interfering in the performance of the firms. The goal of this research is to map the profile of the scientific publication production in Brazil from 2007 to 2017, in reference to the relationship between governance and organizational performance. It is a documentary, descriptive and quantitative research, which analyzed 41 academic articles that were distributed in 23 different journals with a strong adherence to the contents of administration, accounting and finance. The main results were: a trend of growth in the works published until the year 2015, highlighting a considerable reduction in the number of publications in 2016 and 2017, predominance of educational institutions in the southeast region for the most relevant articles and a significant highlight of capital market, financial efficiency, control/ownership structure and board of directors themes.

Keywords: Corporate Governance; Performance; Bibliometric Research

INTRODUCTION

Corporate governance is a very stimulating issue, something that is lively and dynamic within the organization, far from bureaucracy (Silveira, 2014) and presents itself as a system capable of leveraging the economic-financial performance of companies, as well as ensuring the return on investments from financial resource suppliers. Therefore, good corporate governance practices tend to improve economic performance, increase return on investments, and increase company value (Fernandes, Dias, & Cunha, 2010).

The evolution of corporate governance practices has intensified in Brazil, boosted by the opening of the economy, the increase in foreign investments, the privatization process of state-owned companies and the growing number of Brazilian companies with access to international markets (Silva, 2014).

Facts at the international and national levels stand out as milestones in the evolution of corporate governance. Investor fraud scandals such as the Enron, WordCom, Tyco, Adelphia and Parmalat cases have increased the debate on corporate governance, and this prominence is reflected in the media, business and academic circles (Rabelo, Rogers, Ribeiro, & Securato, 2007). In 2016, the requirement of the corporate governance mechanisms gained prominence in conducting business in Brazil. The severe economic crisis that has shaken companies' ability to invest or honor their financial commitments, coupled with investigations that uncovered dozens of corruption cases throughout the year, have prompted the Brazilian government, industry institutions, and companies themselves to draft new laws and codes that definitely introduce good practices in companies, based on transparency, ethics and efficiency (Rossetto & Larghi, 2016).

Checking the bibliometric studies from Eulerich, Haustein, Zipfel and Van Uum (2013), Huang and Ho (2011), Önday (2016), Ribeiro (2014), Ribeiro, Costa and Ferreira (2014), Ribeiro, Machado, Souza, Campanário and Corrêa (2012) and Vartak (2017), considering the evolution of corporate governance in the global context and the importance of studying its impact on firm performance (Silveira, 2014), the research aimed to answer the following question: “What is the profile of the scientific publication production in Brazil from 2007 to 2017, that involves the relationship between corporate governance and firm performance?” The purpose of this research is to map the production of articles and scientific publications in Brazil on corporate governance and business performance from 2007 to 2017. The research evaluated aspects such as evolution of publications in the period, identified journals, researchers’ network, publications by geographic region and by higher education institution, main topics addressed and methodologies used.

For this, the scientific production of the subject was identified through a bibliometric study in articles published in three different databases: EBSCOHost (search.ebscohost.com/), SPELL (Scientific

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Periodicals Electronic Library - www.spell.org.br) and CAPES journal Portal (www.periodicos.capes.gov.br/).

The articles identified in bibliometric research seek to systematize scientific production and contribute to the increase of relevance and rigor of the new research. In addition, they can serve as a basis for comparative studies, which is a growing demand in a global world (Chueke & Amatucci, 2015).
Besides the academic contribution described above, it is also worth mentioning its practical contribution. Silveira (2004) reinforces the importance of studying the theme of corporate governance by recognizing the hypothesis that the fact that governance practices affect corporate performance is widespread. In addition, Mazzioni, Folletto, Gubiani and Kruger (2015) affirm that the study of corporate governance is justified by the additional value brought to the organization.
The intention is to present a study guide that assists in the decision making process. In this sense, during the decision making process about adopting incentive and control mechanisms within the organization, it is necessary to consider beyond the operating costs and agency problems involved, and also think about the relevant studies that describe the effects and possible return on investments for organizations, based on experiences and studies conducted in other organizations.
Finally, the importance of conducting studies in specific contexts is understood, in the particular case of this research,reflecting Brazilian reality. For Hilb (2009), the Anglo-American governance model is being promoted as a global standard and good business practice guide is usually designed for large corporations with publicly traded shares. In this sense, there is a need to map the behavior of organizations in a different context, since the institutional, cultural, normative and business contexts differ from country to country, therefore, the identification of the differences and similarities of each reality is of significant importance.

2. LITERATURE REVIEW

2.1 IMPACT OF GOVERNANCE IN ORGANIZATIONS

The term corporate governance emerged in the Anglo-Saxon economy (corporate governance) and placed environmental and economic pressures on organizations. This in turn resulted in a fairer relationship between corporations and investors in search of a good performance to increase their wealth (Slomski, Mello, Tavares, & Macêdo, 2008).

Throughout the twentieth century, the economies from different countries were greatly affected by the integration of international trade, as well as by the expansion of financial transactions on a global scale. In this context, the organizations underwent significant changes, since the strong pace of the growth of their activities led to a readjustment of their control structure, due to the separation of ownership and business management (Instituto Brasileiro de Governança Corporativa [IBGC], 2017).

To reduce the effect of this problem, literature suggests that organizations and their stakeholders adopt a series of measures to compare interests of those involved, keeping the success of the company in mind, above all. To many, proposals were sent that included monitoring, control and widespread dissemination of information (IBGC, 2017).

The main idea of corporate governance comes from the separation between ownership and management of companies. While both are separated, the possible misalignment of interests arises between the one who actually owns the firm's legal ownership and the one that is responsible for day-to-day management. This new control structure, characterized by the dissociation and misalignment of interests of the parties, is the main focus of the Agency Theory and its features lead to the concept of Corporate Governance

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(Maia & Serio, 2017). Therefore, the understanding of corporate governance involves the understanding of how the agency problem occurs in organizations and what mechanisms can be employed to mitigate it (Silveira, 2014). At its core, governance addresses the minimization of informational asymmetry and conflicts of interest inherent in empowerment (Machado, 2006).

To minimize the problem, the literature suggests that organizations and their shareholders adopt a series of measures to align the interests of those involved, aiming, above all, for the success of the company. With this purpose, monitoring practices, control and widespread dissemination of information were proposed (IBGC, 2017).

In 1995, the Brazilian Corporate Governance Institute (IBGC) was founded, becoming Brazil's main reference for the development of the best practices for corporate governance. According to IBGC (2017), corporate governance is the system by which companies and other organizations are directed, monitored and encouraged, involving relationships between partners, board of directors, board of executive officers, supervisory and control bodies and other stakeholders.

The adoption of good corporate governance practices by organizations tends to reduce the cost of capital in the medium and long term, which is a result of the reduction of risk to stakeholders, as well as improving the quality and transparency of information provided by organizations. All of this positively influences, directly or indirectly, the result of the organization and, consequently, generates conditions to increase the shareholder's wealth (Fernandes, Dias, & Cunha, 2010).

International organizations such as the Organization for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF) and the World Bank see the principles of corporate governance as a solid foundation for economic growth and global market integration. Such organizations recognize that good governance practices are key to controlling the risks of investments in publicly held companies. This is especially true of those arising from the competitive business environment in which they operate. The processes of managing their physical, financial and intangible assets are related to the quality of information available for the investor's decision (Andrade & Rossetti, 2004).

There is no single model of good corporate governance and any one of the systems of ownership and control adopted has its strengths, weaknesses and different economic implications. In addition, the effectiveness of different corporate governance systems is influenced by a country's differences regarding legal and regulatory frameworks and historical and cultural factors. The corporate governance mechanisms and their effectiveness also vary depending on the industry sectors and type of productive activity (Maher & Anderson, 1999).

2.2 CORRELATES BIBLIOMETRIC STUDIES

Similar to the present study, other research has also aimed to study the scientific production regarding corporate governance. Huang and Ho (2011) mapped the scientific production on corporate governance from 1992 to 2008 around the world and the results of that research indicated a growth of scientific production over the years and themes such as property structure, board of directors, and executive compensation having greater relevance in the universe investigated.

For Eulerich et al. (2013), it was crucial to carry out a bibliometric study from 1995 to 2011 on corporate governance for German-speaking countries, since the bibliographic references used are generally influenced by the English-speaking countries and these publications cannot be directly German-speaking countries, since they use a different system of governance.

Önday (2016) extended the period of investigation and carried out a global bibliometric survey covering 30 years of publications. The research sought to identify if the research in governance is indeed a discipline, observing if there is an increment of studies in the time analyzed with variations of topics and significant contributions, thus evidencing a consistent growth in the field of intellectual structure. As a result, he found that the articles demonstrated an increase in methodological rigor, confirming the

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status of a discipline for research in corporate governance, influencing knowledge in economics, administration, finance, law and accounting.
Vartak (2017) developed a study on the systematic review of quantitative and analytical models for corporate governance in publicly traded companies, the corporations, from 1973 to 2017. In this study, the academic production developed in the United States is highlighted, representing 27% of the investigated universe, followed by the UK with approximately 14%. This study points to a rapid growth in the volume of publications on the subject and identifies European journals as the most popular for the dissemination of the knowledge developed by the researchers.

Ribeiro et al. (2012) researched about dissertations and theses related to corporate governance in stricto sensu programs of Brazilian administration, collaborating with the socialization and dissemination of the scientific knowledge produced from 1998 to 2009. The main results were: growth since 2002, the predominance of academic master's degrees, relevance of the universities from the southeast region with the largest volume of dissertations and theses defended and predominance of the quantitative approach in the investigated works. Ribeiro et al. (2014) analyzed the corporate governance theme associated with corporate strategy from 1990 to 2012 in the international journals related to the administration area and verified that there is interdisciplinarity between corporate governance and business strategy. Ribeiro (2014), in his third bibliometric research about corporate governance, from the perspective of Corporate Governance and Corporate Governance: An International Review, identified a network centrality of authors, higher education institutions and countries.
Hundreds of studies about value creation when applying governance have been conducted over the past two decades. Most studies state a strong positive relationship between the adoption of good governance practices and value indicators commonly used in the market (Silveira, 2014).

3 METHODOLOGY

This study is a bibliometric research characterized as documentary, descriptive and quantitative. Bibliometry consists of measuring scientific production, the technique of measuring the performance of researchers from a collection of selected articles, one or more journals or a set of institutions, contributing to the collection, evaluating and analyzing scientific production (Splitter, Rosa, & Borba, 2012).
The objective of bibliometry is basically to evaluate the knowledge of scientific literature in a given field by applying quantitative methods, hence its wide applicability to all types of disciplines (Andres, 2009).
The data was collected by investigating the scientific articles from EBSCOHost (search.ebscohost.com/), SPELL (Scientific Periodicals Electronic Library - www.spell.org.br/) and CAPES journal portal (www.periodicos.capes. gov.br/) databases. The study focused on all peer-reviewed articles in Brazil published between 2007 and 2017.
The study covers three distinct stages, as described below.
First, the research used three different keywords in the databases previously mentioned: governance, performance and indicator. A total sum of 272 articles were identified, which were not located simultaneously by title, abstract and key-words.
Later, the results found were inserted in a scientific article management tool, called Mendeley, and it created a specific library for this study. In this stage, it was possible to remove the duplicate articles in the databases researched and make adjustments referring to the periodicals and authors, leaving a set of 199 scientific articles.
Finally, a critical reading of the summaries of the 199 articles was carried out with the purpose of

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identifying exclusively those that where the object of the study, which was the relationship between corporate governance and firm performance. The article universe was restricted to 41 scientific papers. A cohesive, clean and restricted library was formed, which could be analyzed and critically studied. Then, the data was stored and tabulated in spreadsheets compatible with Microsoft Excel 2013 software and a descriptive analysis was performed, considering the variables related to the evolution of scientific production from 2007 to 2017. These variables include: network of researchers, the distribution of articles by geographic region, the most profitable higher education institutions, the content addressed and the methodological aspects.

4 RESULTS AND DISCUSSION

Figure 1 presents the evolution of publications about corporate governance and organizational performance from 2007 to 2017.

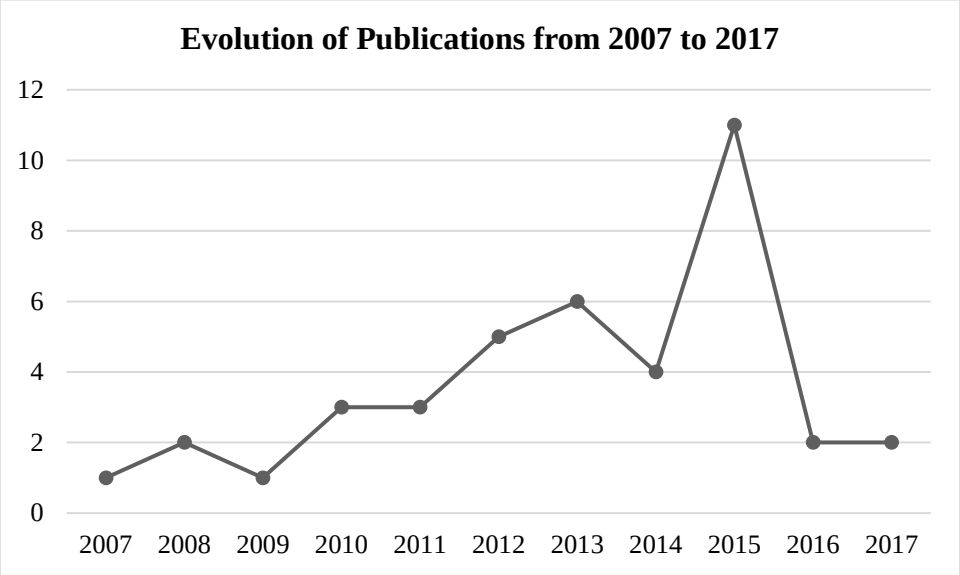

Figure 1. Evolution of publications from 2007 to 2017
Source: Research Data (2017)

A growth in scientific production was observed between 2007 and 2015 as a result of a series of actions that took place in the Brazilian corporate scenario in previous years. Some of these actions were: the improvement of the differentiated listing levels rules in 2006 by B3 (Brazil Stock Market), the substantial growth of companies that began trading their shares at B3 in 2007, and in the same year, law nº 6,404/76, which adjusted the need for greater disclosure. This law came into effect in 2008, determining the convergence of accounting standards with the standards adopted in the main international corporate markets (Ribeiro et al., 2012).

The year 2016, however, contrary to the growth trend of scientific production in previous years, showed a sharp decline. The year of 2014 entered Brazilian history as the year in which the Lava Jato operation (IBGC, 2014) was launched, one of the most important, complex and influential research operations in Brazil. The identification of corruption in the management of Brazilian companies, especially in a public company such as Petrobrás, undermined investor confidence and questioned the current models of governance, directly affecting the perception of quality control (Pereira & Souza, 2017). According to Ho (2011), vital events such as an economic or political crisis negatively influence the volume of scientific production of a country. The scientific production in the years 2016 and 2017 related to governance and performance might have been impacted due to the lack of confidence of the market in

relation to the corporate governance subject.

Table 1 lists the journals identified in the analyzed period. One journal that stood out was the Revista de Administração Mackenzie (Mackenzie Administration Magazine), a publication of the Center for Social and Applied Sciences (CCSA) and the Graduate Program in Administration of the Universidade Presbiteriana Mackenzie (Mackenzie Presbyterian University). Based on the Qualis-Periodicals 2013-2016 classification, from the total of 41 selected articles, 45,28% are classified as high quality indicative strata, covering 12 publications in category A2 (there are no A1 qualification journals in the field of Administration in Brazil), and 48.58% in strata B1 and B2, covering 22 publications. It is inferred that, the present research is based on well-considered and relevant articles.

By multiplying the number of articles by the score of the Qualis strata of each journal (A2 = 80 points, B1 = 60 points and B2 = points) (CAPES, 2018), scores of each journal in relation to the theme are obtained. As a consequence, in the ranking of points, Revista de Administração Mackenzie was the one that stood out among the others with 300 points, followed by the Revista de Administração Contemporânea (RAC) from the Association of Postgraduate Programs in Administration (ANPAD) with 240 points and the periodicals Revista de Administração de Empresas, Revista Universo Contábil, Revista Contabilidade e Organizações and Revista Brasileira de Gestão de Negócios, with 160 points each.

Table 1.
Journal Selection

Journals	**Qty**	**Classification of QUALIS 2013-2016**	**Total (qty x QUALIS score)**	**%**
Revista Administração Mackenzie	6	B1	300	14,15
Revista Contabilidade & Finanças	3	B4	60	2,83
Revista de Administração Contemporânea	3	A2	240	11,32
Revista de Administração de Empresas	2	A2	160	7,55
Revista Ibero-Americana de Estratégia	2	B2	80	3,77
Revista Universo Contábil	2	A2	160	7,54
Revista de Administração da UNIMEP	2	B5	20	0,94
Revista Gestão, Finanças e Contabilidade	2	B2	80	3,77
Revista de Contabilidade e Organizações	2	A2	160	7,55
Revista Brasileira de Finanças	2	B1	100	4,72
Revista Brasileira de Gestão de Negócios	2	A2	160	7,55
Revista de Gestão USP	2	B1	100	4,72
Análise	1	B4	20	0,94
Revista de Ciências da Administração	1	B1	50	2,36
Pretexto	1	B2	40	1,89
Desafio	1	B3	30	1,41
Revista Organizações em Contexto – online	1	B2	40	1,89
Revista de Negócios	1	B1	50	2,36
Contabilidade, Gestão e Governança	1	B1	50	2,36
Revista Turismo - Visão e Ação	1	B1	50	2,36
Organizações Rurais & Agroindustriais	1	B2	40	1,89
Revista de Administração Pública	1	A2	80	3,77
Tourism and Management Studies	1	B1	50	2,36

Total	41	-	2120	100,0
Journals	Qty	Classification of QUALIS 2013-2016	Total (qty x QUALIS score)	%
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Revista Gestão, Finanças e Contabilidade	2	B2	80	3,77
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Revista Brasileira de Finanças	2	B1	100	4,72
Revista Brasileira de Gestão de Negócios	2	A2	160	7,55
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Revista Turismo - Visão e Ação	1	B1	50	2,36
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Revista de Administração Pública	1	A2	80	3,77
Tourism and Management Studies	1	B1	50	2,36
Total	41	-	2120	100,0

Source: Research Data (2017)

The researchers' network identified points to names with recognized national prominence in the Corporate Governance theme, such as Fernanda Maciel Peixoto, Luciano Rossoni and Wesley Mendes da Silva, respectively linked to the Universidade Federal de Uberlândia (UFU), Universidade de São Paulo (USP) and Fundação Getúlio Vargas (FGV/EAESP). Table 2 lists all authors with two or more publications from the analyzed universe.

Table 2.
Most influential authors

Author	# Articles	Author	# Articles
Fernanda Maciel Peixoto	3	Luciano Rossoni	3
Wesley Mendes-da-Silva	3	Alexandre Di Miceli da Silveira	2
Cristian Baú Dal Magro	2	Fernanda Finotti Cordeiro Perobelli	2
Geovanne Dias de Moura	2	Hudson Fernandes Amaral	2
Ilse Maria Beuren	2	Josete Florêncio dos Santos	2

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Laise Ferraz Correia	2	Márcia Martins Mendes De Luca	2
Moisés Araújo Almeida	2	Orleans Silva Martins	2
Pascal Louvet	2	Roberto de Nascimento Ferreira	2
Rosilene Marcon	2	Thayse Machado Guimarães	2

Source: Research Data (2017).

The predominance of partner authorship was identified in the 41 analyzed articles, identifying recurrent partnerships, which highlighted a continuity in the subjects discussed. Among the main partnerships are:

a) Alexandre Di Miceli da Silveira and Fernanda Finotti Cordeiro Perobelli;
b) Fernanda Maciel Peixoto and Thayse Machado Guimaraes;
c) Luciano Rossoni and Wesley Mendes-Da-Silva;
d) Ilse Maria Beuren and Geovanne Dias de Moura;
e) Hudson Fernandes Amaral, Laise Ferraz Correia and Pacal Louvet;
f) Moises Araújo Almeida and Josete Florêncio dos Santos;

Figure 2 shows the articles' distribution by geographic region in Brazil. The southeast and southern regions are noteworthy, with emphasis on the work carried out in the states of Minas Gerais, with a total of 30 different authors, the state of Santa Catarina with 15 authors and the state of São Paulo with 13 authors.

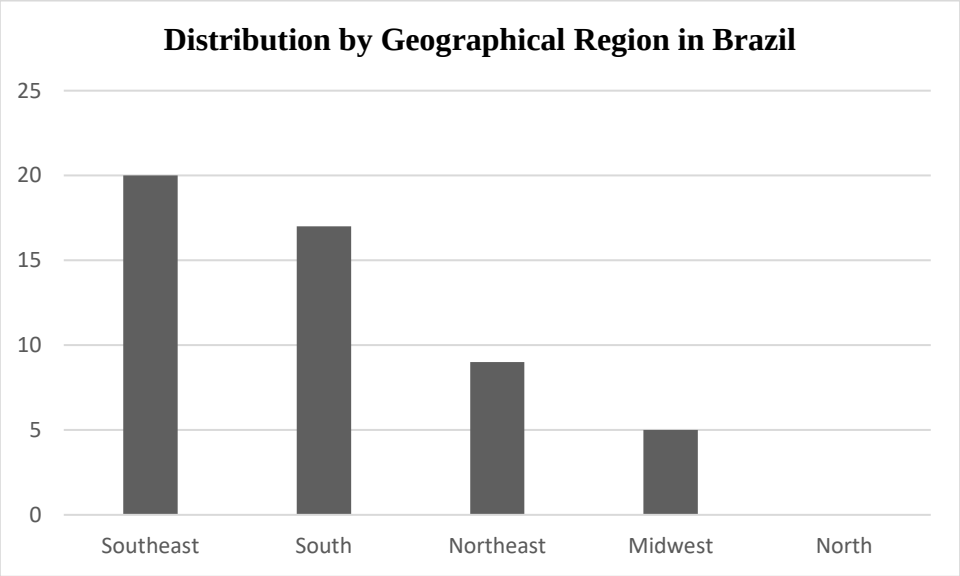

Figure 2. Distribution by geographical region in Brazil
Source: Research Data (2017).

From the 42 higher education institutions identified, 20 stand out presenting two or more publications. Table 3 presents the 20 most influential higher education institutions in the period analyzed, with the University of São Paulo (USP) taking the lead. Four international institutions with publications in partnership with Brazilian universities were also identified: Escuela Superior de Administración y Dirección de Empresas in Spain, Florida International University in the United States, Université Pierre-Mendès-France in France with two publications and Instituto Nacional de Engenharia de Sistemas e Computadores in Portugal.

Table 3. **Most Influential Higher Education Institutions**		
Higher Education Institutions	**Publications**	**Location**

Universidade de São Paulo (USP)	7	SP
Universidade Regional de Blumenau (FURB)	4	SC
Universidade Federal de Minas Gerais (UFMG)	3	MG
Universidade Federal de Uberlândia (UFU)	3	MG
Universidade Federal da Paraíba (UFPB)	3	PB
Universidade Federal de Pernambuco (UFPE)	3	PE
Universidade Federal do Paraná (UFPR)	3	PR
Fundação Getúlio Vargas (FGV)	3	SP
Universidade de Brasília (UnB)	2	DF
Universidade Federal do Ceará (UFC)	2	CE
Centro Federal de Educação Tecnológica de Minas Gerais (CEFET-MG)	2	MG
Universidade Federal de Juiz de Fora (UFJF)	2	MG
Universidade Federal de Lavras (UFLA)	2	MG
Universidade Federal de São João Del-Rei (UFSJ)	2	MG
Universidade Federal de Mato Grosso do Sul (UFMS)	2	MS
Universidade do Grande Rio (UNIGRANRIO)	2	RJ
Universidade Federal do Rio Grande do Sul (UFRGS)	2	RS
Universidade do Vale Itajaí (UNIVALI)	2	SC
Universidade Federal de Sergipe (UFS)	2	SE
Universidade Presbiteriana Mackenzie	2	SP
Université Pierre-Mendès-France	2	France
Source: Research Data (2017).		

Table 4 shows the contents addressed in the articles selected. The fact that the theme of capital markets is the most evident topic among the articles was observed, since 75% of the articles analyze companies listed in B3. According to Marcon and Souza (2007), the Brazilian stock market gives clear demonstrations that adherence to the differentiated levels of corporate governance highlight the search of the participating companies for the improvement in the relationship with shareholders, as well as an increase in the potential of the value their actives. During the analyzed period, there was great growth over the years.

The theme of financial efficiency comes next with 48% of the articles analyzed, which represents the positive relation of the application of governance mechanisms to increased financial efficiency. The control structure, property structure and board of directors topics represent the instruments that were created in response to the main problems between the principal and the agent in the agency theory. In this theory, the principal engages another person - the agent - to perform some task on their behalf, thus representing the role of shareholders, executives and members of the board of directors.

The five themes mentioned above are similar to the themes presented by Ribeiro (2014) in a study The Corporate Governance Journal: An International Review.

Together with the market valuation, agency theory and governance index themes, the top eight themes identified represent the most outstanding set of issues, characterizing in this sample, which were 76% of the themes developed. This set of themes goes in accordance with the concept of corporate governance highlighted by Silveira (2004), since it values the control mechanisms in the search for the minimization of costs arising from the agency problems, besides highlighting the monitoring of the impact on company performance.

Table 4.

Publications by themes

Theme	**Year (2000)**

	07	08	09	10	11	12	13	14	15	16	17	Total	%
Capital Market	1	2	1	1	2	5	6	4	8		1	31	15,4
Control Structure			1	1	2	3	3	2	7		1	20	10,0
Financial Efficiency	1	2	1	2	1	1	2	1	8		1	20	10,0
Administrative Counsel		2	1	1	2	2	2	3	5		1	19	9,5
Property Structure		1			3	2	3	2	7			18	9,0
Market Value			1	2	1	3	4	2	4	1		18	9,0
Agency Theory			1	1	2	1	2	1	6		1	15	7,5
Governance Index	1			1	1	1	1	2	4	1		12	6,0
Access to Information				1	3	1		1	2			8	4,0
Risk Level				1	2	2			2			7	3,5
Accountability				1		1	1	1	1		1	6	3,0
Disclosure				1	1	1		1				4	2,0
Regulations					1		1		1	1		4	2,0
Operational Efficiency							1		2			3	1,5
Business Strategy					1				1		1	3	1,5
Information Technology					1					1		2	1,0
Electrical Sector							1		1			2	1,0
Audit				1		1						2	1,0
Politcal Relations						1				1		2	1,0
Family Business							1					1	0,5
Educational Sector				1								1	0,5
Toursim Sector									1			1	0,5
Farm Co-ops									1			1	0,5
Public Governance										1		1	0,5
Total	3	7	6	15	23	25	28	20	61	6	7	201	

Source: Research Data (2017).

There are issues with some topics having less representation, such as auditing, family business and governance in the public sector, therefore highlighting issues that may be investigated in the future and identified in relation to corporate performance.

No mention was made of topics such as remuneration policy, which was highlighted in the study of

Huang and Ho (2011), and corporate social responsibility, which also received emphasis in the studies of Maia and Di Serio (2017) and Ribeiro (2014).

As far as methodological aspects are concerned, longitudinal studies, quantitative approaches and the use of the Economática database are shown. 60.98% of the data mapped from the articles was extracted from the financial information and economic indicators available in the Economática database and 39.02% from accessing the Brazilian Securities and Exchange Commission website (CVM).

The regression analysis was the statistical technique most frequently used in the analyzed studies, representing 53.66%. It is commonly used in order to verify the existence of a relationship between two or more variables. According to Hair, Black, Babin, Anderson and Tatham (2009), this technique can predict the changes in the dependent variable in response to changes in the independent variables. Similarly with 36.59%, there is the panel data analysis technique, which is a result of the number of observations over time, and descriptive statistics that allows the description of a set of data and also the use of descriptive statistics. Content analysis, typical in qualitative studies, was used the least.

Similar to the study presented by Ribeiro et al. (2012), this research identified the Universidade de São Paulo (USP) as the most profitable. It also highlighted the Universidade Regional de Blumenau (FURB) among the other identified higher education institutions. The predominance of quantitative studies differs from that found in the study by Ribeiro et al. (2012), which positions the case study as the methodology used in most articles. In counter part, it recognizes the regression technique as the most commonly used technique used in quantitative studies.

5 CONCLUSION

This study deals with the scientific production in reference to the relationship between corporate governance and organizational performance in Brazil from 2007 to 2017. This study presents itself as a pioneer in the topic addressed, focusing on the relationship between the application of corporate governance and organizational performance. Among the analyzed articles, we investigated 41 studies dedicated to the identification of value creation to the organization by the governance. There was a trend of growth in the works published up until 2015, highlighting a considerable reduction in the number of publications in 2016 and 2017.

In regards to the network of researchers, we highlighted the publication of works done via partnerships, predominately from educational institutions in the southeast. The most discussed themes in the universe analyzed were capital markets, financial efficiency, control and ownership structure and board of directors. It also identified governance themes that have not yet been explored, such as auditing, family business and governance in the public sector. It is important to note that 75% of the articles analyzed companies listed in B3, therefore identifying a lack of studies in other types of organizations.

For future research, increasing the scope and covering international publications with similar impact factors would be suggested. Another research possibility would be an investigation into the effects of corporate governance in the public management field, considering the relevance and impact on society. There was only one publication addressing public management in the sample analyzed, which analyzed the impact of governance on socioeconomic indicators of the BRICS countries (Marino, Soares, Luca, & Vasconcelos, 2016).

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HARMONIZATION OF INDUSTRIAL REVOLUTION WITH LOCAL COMPANY CULTURE

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Abstract

The wave of industrial revolution brings changes. An appropriate Company Culture Development Program (CCDP) needs to be developed for harmonization of industrial revolution with local company culture. A vision that technology is developed and applied for the benefit and happiness of humankind should be adopted. **How should the adoption be, for this vision, in a company with workers exceeding 2,000?** Workers in big companies in Indonesia have very limited education and training. Too few of them catch the fast technology development in the world. They have to be given a vision of good health, happiness and a better future. A CCDP has to be designed for fulfilling this aim. A mix mode process for CCDP related to the product from industrial revolution phase 1, 2, 3, 4 and the predicted 5, and also related to local culture, may be designed optimally for sustainable logical growth and profit of a company. That mix mode process should be used as a new approach which need to be local dependence. A practice is carried out for Sritex Company as a textile industry which has around 50,000 workers. The practice of CCDP started in 2013 as a mix mode, between face to face learning and the use of local available information technology. This simple principle optimizes the harmony of five parameters, which are local constraints, people, culture, technology and process, which have been carried out based on local art of practices. Experiences learnt give satisfactory result related to workers' health, happiness, company growth and profit.

Keywords: Technology; culture, harmony, happiness, company growth

Initiation of Sritex History

History of Sritex is a portrait of entrepreneur by Lukminto family started in 1966. Lukminto was born in 1947 and initiated his business when he was 19 years old. He started his business with a seed capital of IDR 100,000 (Indonesian Rupiah one hundred thousands). In 1966 the seed capital was less than US $ 500. He started to do business as a trader in buying and selling everyday clothes in a market called Pasar Klewer in Solo, Central Java, Indonesia. After twelve years of experience Lukminto did his basis of business establishment through a notary in 1978 and got a Ministerial Decree from the Ministry of Justice of the Republic of Indonesia in 1982. In the year of 2013 Sritex started to be a factory with shareholders.

In his mind, Lukminto raised a question about how to make everyday clothes. Based on the question, then he bought products from weaving and learned printing everyday clothes by his own hand. Furthermore, he thougt of another question: how to make weaving products? Then he learned to do weaving. Not satisfied with his achievement, then he learned making thread or yarn, to do spinning. After thinking upstream, then he also thought of downstream one to learn making and selling garments. Finally he decided to establish a factory which is capable of doing

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spinning, weaving, printing or finishing and garment. Garment from Sritex is categorized into two types: Uniform and Fashion.

Lukminto died in 2014 after accumulation of tacit knowledge brought about that had been shared with his many friends and two sons in his vertically integrated factory. He did his production from textile starting manually then moving forwards through continuous improvement passing product of industrial revolution 1.0, 2.0, 3.0 and continually 4.0. His second generation now continues for preparation of welcoming the projected industrial revolution 5.0.

Lukminto's Historical Thought Related to Values and Norms

Learning from his experiences, he decided to lay foundation for more successes based on tacit knowledge. First reference is his conclusion related to success in general, related to his responsibility for factory and for family. The second is a foundation of thought related to teamwork management in his factory. The first is called the "8 Principles of Success" and the second called *"Trilogi lan Tri Dharma of Sritex"* in Indonesian and Javanese, originated from famous saying in local wisdom.

The 8 Principles of Life

The Eight Principles of Life as written in a book by Nasir Tamara (2013) that Lukminto inspired by the number as because he is the eight child of 12 children in his family.

1) Fair and do no harm to others.
2) The importance of family. Family should be his number one priority. He should do efforts to make his children leads to good life, good and smart, and continue to live in Indonesia to serve the country.
3) Sharing benefit with others. A successful entrepreneur will acquire a lot of wealth. The wealth should be shared together with community, for example through wider investment and creation of new job opportunities.
4) Education is very important. Education is very important to develop competency. Parents should provide money for children education.
5) Work ethos is very important. Workers should work hard intelligently and also diligently. A person should not simply blame others without giving direction for solution. A person should be able to develop wisdom, understand both the problem and pathway for solution.
6) The importance of love. He did not read the saying of mother Teresa but he showed compassion for others; he cares and corcerned to give support generously to people needed surrounding him. He tries to put love in every gift from him.
7) The principles of friendship. Humans should help one another that will automatically invite the presence of happiness. Lukminto has many friends locally, nationally and internationally.
8) The importance of religion. Lukminto believes that religion is the guidance of life, that one can live happily and righteusly with it.

It was written in his biography book (Tamara, 2013). He shared his tips for success in 2012"; " The key to success for an entrepreneur is to be honest, to do no harm to others, and to create the highest quality product you can make. The price of the product should also be competitive. Entering the textile and textile products industry is never easy". His tacit knowledge not only noted as the eight principles for success but also produced a kind of structural thinking for

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creating synergy among workers.

The Famous Local Wisdom Adopted

The structural thinking was adopted from local wisdom called "*Trilogi lan Tri Dharma Sritex".* A mix mode process for the CCDP (Company Culture Development Program) related to the complex and complicated product from industrial revolution phase 1, 2, 3, 4 should be developed. A vision for the predicted industrial revolution 5.0 is needed also for more complete consideration. People has background, such as life history, pre-knowledge and experience that shape individual specific culture. Workers in Sritex are usually delivered from surrounding areas that must be understood for consideration in the further development of the company. Thus the CCDP must be designed optimally for sustainable logical growth and profit for the company.

***Trilogi* (Indonesian language):**

Perusahaan adalah sawah ladang kita bersama (The company is our livelihoods).

Hari ini harus lebih baik dari hari kemarin, hari esok harus lebih baik dari hari ini (Today must be better than yesterday, and tomorrow must be better than today).

Kita terikat sebagai keluarga besar Sritex yang mengutamakan persatuan dan kesatuan (We are Sritex family and unity is our priority).

***Tri Dharma* (Javanese language):**

Melu handarbeni (Having a sense of belongings)

Melu hangrungkebi (Having a sense of responsibility)

Mulat sariro hangosowani (Having a sense of awareness, self evaluation)

The adoption of local culture will create emotional attachment. It makes workers and managers at many levels feel as one family, so that they are able to work under the atmosphere of harmoneous cheerfulness, happiess, passion and togetherness. Company always faces challenges related to long term strategy, and also related to quality and quantity polices. Integrating the local wisdom to structural thoughts of activity management is needed. This matter leads to a thinking concept shown in Figure 1 (Human Resources Development Division Sritex Company, 2017).

Quality and Quantity Policies in A Long Term Strategy

Similar to other companies, Sritex has laid down a policy which consists of three contents: a) meeting standards and satisfaction of customers, b) delivering on time, c) conforming sustainable quality improvement continuously. There are more reminders related to the orientation of quantity and quality, mainly:

1) Increasing production capacity and improving planning systems and production processes
2) Ensuring the availability of high-quality yarn fiber as a raw material in the production process
3) Developing and expanding customer base products and selling
4) Developing innovation for high value added products
5) Strengthening corporate management through efficiency improvement and good corporate governance implementation.

Sritex faces cotinuous challenges due to the presence of industrial revolution 4.0 and the projected 5.0. Solution will be really put on to the quality of human resources in the company. An appropriate approach to the external influence and the internal culture should be determined

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for the sustainable company producing textile and the related products.

Connectivity Between Thinking Concept and The Industrial Revolution

A picture for thinking process above shows *Trilogi, Tri Dharma* and 2 specific and unique values serve the nation and humanity plus life values and spirituality. The picture is a kind of *CIRAKA* conecting between people in the company with the industrial revolution. *CIRAKA* is a local language abbreviated from (*Cipta, Rasa, Karsa*) which means thinking, feeling and willingness.

The wave of industrial revolution brings changes. An appropriate Company Culture Development Program (CCDP) needs to be developed for harmonization of industrial revolution with local company culture. A vision that technology is developed and applied for the benefit and happiness of humankind should be adopted.

Facing whatever kind of wave in industrial revolution, all people in the Sritex family are expected to be in pride and passion, in cheerfulness and commitment, in health and happiness (P2, C2, H2). Sritex has employed heterogeneous people characters and capabilities but they have to learn as suggested by the picture of thinking process, derived from Lukmito tacit knowledge which will be continued by his two sons in the company, Iwan Setiawan Lukminto (Iwan) and Iwan Kurniawan Lukminto (Wawan).

The implementation of adopted thinking process is not free from constraints and challenges. Iwan and Wawan as the second generation of Lukminto family have tried to manage and improve the thinking process to response the wave of industrial revolution 4.0 with anticipation for the coming industrial revolution 5.0.

Learning Organization

Sritex determines to establish a special buliding for learning center and tries to always arrange systematic ways in responding changes. There is monthly performance meeting in which managers gather to present their monthly achievements. Through the meetings, a procedure to look for a synergy of best practice of collective intelligence is carried out. The company tries to combine ideas of explicit and tacit knowledge expressed by X, Y and Z generation.

The monthly meeting is a means of learning process to understand P2, C2, H2 with the guidance of *Trilogi lan Tri Dharma* specifically under the general picture of Sritex thinking concept, (STC). Every month Sritex concludes understanding and internalization of three chosen relevance sentences at the meeting for doing a continuous improvement process, as required by *Tri Dharma.*

Identification about gap between the achievement at the time of the meeting and the projected future excellent can be noted with fulfilling Table 1. This Table shows a simple format as an example for guidance of manager in implementing the STC.

More Systematic Ways in Responding Changes

The Sritex culture to be the root of efforts to enhance individual local tradition now becomes Sritex teamworks tradition in responding to the coming of industrial revolution. The combination of explicit knowledge on local wisdom and Lukminto tacit knowledge through experience that have been noted in the core values of Sritex called *Trilogi lan Tri Dharma,* should be applied in the context of STC. A model of CCDP tries to do a kind of Dynamic

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Programing Optimization to respond to changes. Communication among people is carried out by using mix mode that is the combination of using cellular phone for virtual knowledge sharing and face to face meeting for the warmer dialogue related to the local culture.

A model is always purpose oriented. In a broad view, the design for growth and profit of the company, Sritex put its orientation towards the balancing of three in one components, those are: a) industrial revolution, b) format of life values, c) norms (Ministery of Research, Technology and Higher Education, Republic of Idonesia, 2017). In the implementation of the dynamic model, an optimization based on five main parameters under STC context is applied. The concise function consideration can be written as function of local constraints, people, culture, technology, process. The model consisders the three main cost: financial, time and psychological costs. This simple principle in optimizing the harmony through the model approach of five parameters has been carried out based on the local art of practice.

Learning Community in The Company

Workers in big companies in Indonesia have very limited education and training. Too few of them are able to catch the fast technology development in the world. They have to be given a vision of good health, happiness and a better future. A CCDP has to be designed for fulfilling this aim. Health and happiness are essentially derived from good understanding about endeavor in learning to master a kind of competence. In local culture, the knowledge terminology is *Ilmu* (knowledge). There is a famous saying read as: *Ilmu Iku Kalakone Kanti Laku*.

People is required to internalize this saying. People will be easier to understand a scenario of a program and activities facing industrial revolution based on the local culture, saying that they have understood before. A brief history and meaning of the saying may be explained below.

Ilmu Iku Kalakone Kanthi Laku (Javanese language), means: Knowledge Can Be Achieved through Efforts.

In Javanese culture there is a philosophy of study, listed in *Serat Wedhatama* by the King of Mangkunegaran IV, in the poem of *tembang pucung*, "*Ngelmu iku kalakone kanthi laku."* which means that knowledge can be achieved through effort, reached by action, started with motivation. The company perceives and interprets the saying to be the mindset of people as follows (Team 5 in Hydraulics Laboratory of Gadjah Mada University, in 2018).

Education is the medium for us to gain the knowledge, from not knowing to knowing, from nothing to something. *Ngelmu* in the sentence above means not only merely knowledge but also a practice. Therefore, knowledge does not mean only learning about mathematics, but also how to implement it. We can not master the knowledge without implementation, contemplate and enthusiasts. *Laku* means work hard, effort, perseverance, patient, to avoid temporary enjoyment; one of the ways to achieve it is by substituting eating and sleeping for studying and praying. In Javanese idiom, it is called as *"cegah dhahar lan guling"*.

Now in Indonesia, it is described that there are a lot of variety of knowledge in our life that consists of six knowledge clusters, which are religion, humanity, social, science about nature, formal as math and logics, completed by applicative knowledge clusters. All of those clusters have the objective to simplify and direct human to live better. Everything is connected to each other as shown by knowledge development from mono-discipline to multi-discipline, inter-discipline and transdicipline. All of the clusters of knowledge have the benefit to make life easier and help human live in happiness.

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If we speak about knowledge, we can not leave education because the education process means a never ending process of human conscious action. From Neolithic era to modern era, education process has been conducted both through formal and informal ways so that a nation can develop its own education system. This education system should be built based on the generation challenges; hence the education can create the best outcome that fits the generation challenges. The knowledge can be gained through formal, non-formal and informal ways. Formal education way is achieved through school from elementary to university. The student is required to studying diligently and honestly since early life. This formal education has a place in children's character shaping. Non formal education way can be achieved through training out of school. The last education way can be found from family and environmental education.

Human is created by God blessed by high intelligence which can be used to achieve knowledge not only from book reading or formal education but also from daily activity such as observing the environment. From this observation, human can process information logically. Their logical thinkings systematically succeed to reveal their invention theory which still can be used to guide us into newer inventions and innovations. Of course, these inventions are achieved through work hard and perseverance.

The meaning is likely at the same conclusion like many communities, in many nations. Whatever nation, whoever deeply reflects the human potential in pursuing knowledge for a better future, it is likely to come to the same enlightement.

An Approach Using the 8i Principles

There is 8i principles in process and progress in the time being. The 8i principles may be described shortly as follows (Department of Industrial Engineering of Gadjah Mada University, 2017).

The principle of 8i for working solution on challenges:

1. **Initiation to learn from experience, for experiences or small things that cause concern.** Example: things that cause electricity disturbance, water leak, water puddle, or else. It can be made into a list of hundred items/points.
2. **Inspiration (proactive), anticipative, preventive, not reactive even though it's fast enough in responding.** *Inpro* (inspiration, proactive) team has to wander together in reviewing the check list of hundred items which need anticipative preventive actions.
3. **Initiation (preventively).** Every preventive action started from pre-initiation that includes the meaning of precondition which decides an action. Initiative phase needs a commitment. Commitment to learn smart from the best teacher (experience), for example, a list of hundred items are needed. Make a team in charge after a commitment is achieved and the existing part of the organization can immediately process the ideas and idealism thinking. In this case there are regulation related to both structural dimension and human dimension. Manager-Leaders who understand the local culture usually achieve success compared to managers that have not understood yet the inside company culture.
4. **Idea and Idealism.** List of preventive actions is the integration of practice idea and idealism thinking. This principle needs to be understood because an action is the product of a decision with cost consequences.

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5. **Information.** The quality of preventive action is determined by information quality obtained from data or experiences. Data and information collected must be processed, analyzed, interpreted, concluded, and used to the fullest.
6. **Identification.** The results of evaluation and analysis are the base to identify points of preventive action, problem identification and its solution; be equipped with the related description which is useful to set a target preventive actions that are already being appointed.
7. **Inception.** The meaning of inception is a form of crystallization of problem understanding and solution that can be developed, both program detail and activities. The result of activity with inception keyword is clear writing about background, goals, and approach process.
8. **Implementation.** Make a realistic implementation to drive the teamwork based on local properness.

Conclusion Remarks

The CCDP in Sritex expects that the application of the STC in mangement will develop people capacity to their peak actualization of knowledge, skill, attitude, life values and sprituality. With their peak actualization, people in Sritex have an environment to easier manage the balance of living in H2O (Health and Happiness, Optimally). Up to now, with the STC approach, the company produces experience learnt that gave satisfactory result related to workers health, happiness, company growth and profit.

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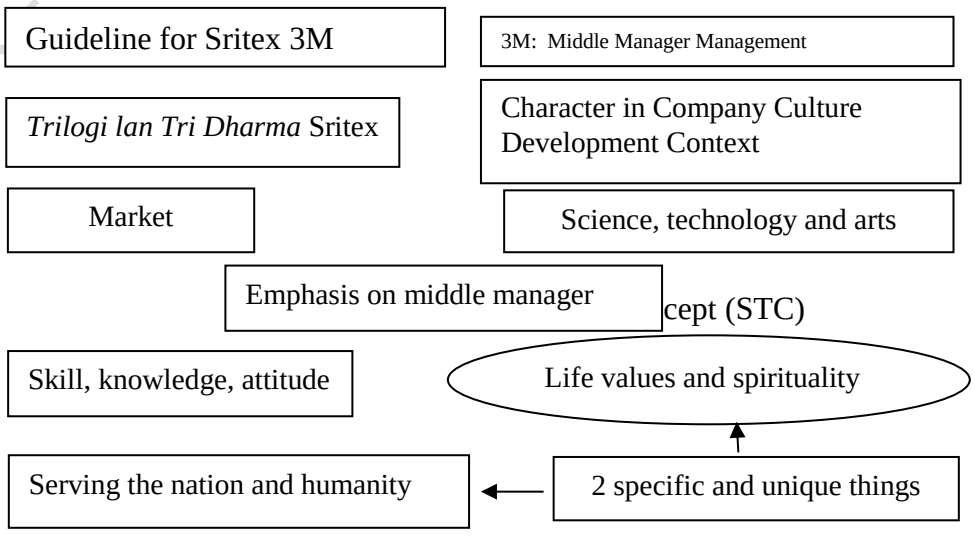

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Table 1 . A Format To Note Gaps Between Company Achievements and The Projected Excellent

ITEMS	Deficiency	Concern	Good	Very Good	Excellent
~~Individual Knowledge~~ Individual Skill Individual Attitude Individual Life Values Individual Spirituality Sub-System Synergy System Synergy					

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ANALYSIS OF THE EFFICIENCY OF PRIVATIZED AND NON PRIVATIZED BRAZILIAN AIRPORTS WITH PARAMETRIC AND NON-PARAMETRIC MODELS

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Abstract

This study analyses the efficiency of Brazilian airports being newly privatized and administered by Infraero, a company partially own by the government. By using the databases of the National Civil Aviation Agency (ANAC) and the Brazilian Company of Airport Infrastructure (INFRAERO) for 2012 to 2018. 59 airports were submitted to analysis. Multiple regression was used to validate the variables of the proposed model. In this model, the measure used to represent the performance of airports was the amount of aircraft movement for the variables that determine the performance. It took into account passengers, air cargo and mailing as outputs or products (independent variables) and aircraft movement as input (dependent variable), using Data Envelopment Analysis (DEA), the Stochastic Frontier Analysis (SFA), Free Disposal Hull (FDH) and clustered analysis with DEA (Fuzzy C-Means DEA). In order to correct the efficiency figures found, taking into the inherent random error of the data, a bootstrap approach was applied. The identification of the most efficient airports, given the inputs and outputs considered, a comparative assessment was carried out between privatized airports and not privatized in order to sediment the controversy between researchers that the privatization leads inexorably to efficiency. It was concluded that the efficiencies show that there is evidence of increased efficiency. In this way, the efficiency provided by comparison with the other parameters inserted in the analysis, it is the greater the proportion of movements in relation to the size of the available infrastructure from the observed airport. The results also show that the size of an airport was not decisive for attributing efficiency, although it is a relevant criterion to boost improvements in performance. It is worth to mention that some non-privatized airports were also efficient. The innovation brought in this research Parametric and non-parametric methods as well as Fuzzy C-Means. The results were different for each methodology but it is possible to verify that most of them appear as efficient in a nonparametric model. Airports were ranked according to homogeneous methods and variables were used in the light of the heterogeneity of the airports themselves in function of size and capacity. By changing the model of airport operation and transferring five main airports to the private initiative, it has been proved that there is no way to prove an increase in efficiency just because of the ownership model. In fact, it was revealed that four of the main and largest airports maintained or decreased the same operating efficiency ratios. Privatization did not result in increased efficiency.

Keywords: Efficiency. Privatization. Data envelopment analysis. Airports. Operational efficiency. Productivity.

INTRODUCTION

As economic activity is not distributed equally in space (regional GDPs are different in the same country, for example) regional inequalities can be expected to exist. These (inequalities) present in the economic literature through the comparative advantages and theories of economic development (Krugman (1991),

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Krugman, 2008, Sachs and Waner (1999), Solow (1956).

Owen (1975, p. 39) stated that developing countries have a classical immobility because of scarce resources for this sector, and that developed countries today are those who have invested a fixed percentage of their GDP in transport. Nioh (2009) reaches similar results years later. For the author the relationship between transportation and development infrastructure may be stronger in less developed countries.

Transport infrastructure influences production costs, trade flows, and firm location (Krugman (1991), Krugman and Venables (1995), Chandra and Thompson (2000), Hesse and Rodrigue (2004)), the determination of and social well-being. Firms that operate with increasing returns tend to be located in countries with better domestic logistics when trade is integrated, in order to benefit from the benefits derived from economies of scale.

Limão and Venables (2002) point out that a 10% increase in transport costs is equivalent to a 25% drop in trade flows. Considering a sample of 93 countries, the authors estimated the elasticity of trade flows in relation to transport costs at -2.5. Thus, transportation costs are inversely proportional to the availability of transport infrastructure in terms of quality and productivity. In order to do so, the infrastructure must allow the increase of economic performance, according to the preferences of the society: levels of standard and quality of life desired, according to Limão and Venables (2002).

Airports are large enterprises so that not only do they contribute to the increase of the Gross Domestic Product (GDP) in the service line, but also are essential for reducing transportation costs for people and cargo along with other means of transportation.
Dugonjíc (1989) says that the provision of transport services is a decisive factor for the take-off of the development of a region. Regions provided with fast and agile fixed transport system fixed the intellectual capital (investments in transport must be distributed between modes of transport). Some current basic issues can be raised around Infrastructure such as public ownership / management; systemic competitiveness of the economy and economic growth.

Other authors will defend the thesis of investment in infrastructure such as: Nadiri and Mamuneas (1996) where disaggregated data for industry showed a shift in the cost function of industries, to a greater or lesser extent, when infrastructure conditions were improved (main: paper, chemistry and petrochemical) and that the results are superior to those obtained in research and development spending. Easterly and Rebelo (1994) show that transport investments have a correlation of 0.59 with growth and that (public-sector less) investments have a correlation of 0.3 with growth and 1 with private investments. Aschauer's (1993) economic theory identifies five channels by which infrastructure can positively impact economic growth: infrastructure is a direct factor in the production process; infrastructure must have to see as complements to the productive process, in the sense that it increases the possibility of lower production costs or their deficiencies can create a number of costs for firms; infrastructure should stimulate capital accumulation, for example by serving as providers for the development of human capital; infrastructure investment can increase aggregate demand through expenditure during construction, and possibly during the maintenance of operations; and, finally, investment in infrastructure can serve as a tool to assist industrial policy through projects that can guide decisions for private sector investment.

Both in the theoretical and empirical literature there is a positive relationship between infrastructure and investment growth, poverty reduction, job creation and sustainable development. Infrastructure building programs often lead to short and medium-term, thus, employment opportunities reduce rural poverty.

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There are many promises that investment in transport infrastructure can be a way out for developing countries to alleviate their poverty levels and provide more dignified living conditions for the population, including enabling distributed income to places where international experience points to the path. Considering that Brazil is the largest country in Latin America and has continental dimensions, the focus of this work is an investigation by means of parametric and non-parametric models to measure the operational efficiency of airports, whether or not they are privatized between the years of 2012 and 2018. We have a sample of 59 of the largest airports in the country, some of them classified as hubs, having been privatized around 2014 to 2016. Privatized airports account for about 50% of Brazil's passenger and aircraft traffic. The other 50% was taken over by INFRAERO, a public company that manages the airports for about 50 years. The data were collected directly from INFRAERO and from the National Civil Aviation Agency (ANAC). The database had same methodology until the end of 2017 and the first quartile of the year 2018.

Currently, this database is no longer available since the Federal Government has modified the availability of the data as well as presenting statistical reports without that the researcher has direct access to the database. It is also necessary to show that in 2012 there was an atypical movement due to the visit of Pope Francisco to the Youth Day, a world event in which Brazil received more foreigners. In 2014 Brazil hosted the Wolrd Cup and in 2016 the Olympics. These factors had to be smoothed and treated so that the data did not produce noise. This work presents simple variables such as mail, air cargo, handling and national and international passengers, which corroborates with Wanke (2012) and Jardim, Baltazar, Silva and Vaz (2012). This work is relevant in terms of practical applicability: Different theoretical models applied to Brazilian airports regardless of their size or geographic region:

1. Privatized and non-privatized airports and their performances;
2. Comparison of airport operating efficiency with other major airports is significant for (airport) management in planning, operations and performance monitoring.
3. With the same investments, infrastructure and regulation, airports with different efficiency can accommodate different traffic flows of passengers, cargo and aircraft.
4. Non-consensual property x efficiency model (There is a thesis that privatizations have a positive impact on efficiency).

2 LITERATURE REVIEW

2.1 Airport privatization: brief review

Privatizations in the sector have been strengthened by British Airways Aviation (BAA) and the day-to-day management of privatized airports in other countries has two important points, such as airport management specialized in this sector or the results do not appear as they could. The other point about performance is that the more experienced the administrators are the greater the propensity of return on investment given their expertise. But despite all this, management plans are still unclear. There are indications that corporate governance in the sector shows better operational and financial results but there is no step by step even because each airport operates under a jurisdiction, subject to different laws, different customs, different culture. Oum, Yan and Yu (2008) estimate that there is an 8% probability that airports operated by a private company are more efficient than those operated by a public company. These results are also found Oum, Adler and Yu (2006). On the other hand, Scotti et al. (2012) believe that public airports are more efficient than privatized and inserted in a hybrid context. As Megginson and Netter (2001) argue that there are theoretical arguments to address the impact of privatization in last ratio depending on the degree of market failure. This is because airports are a natural monopoly and if

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competition is naturally strong than with state-owned enterprises they may be forced to increase their productive efficiency and the impact of switching to privatization may not be as significant. The authors examine several studies applied to so-called transition and transition countries, concluding that global research supported the proposition that private firms are more efficient and more profitable.

In addition to the relationship between airport ownership and efficiency, others also investigated in the literature the link between privatization and profitability and the impacts and incentives of airport capacity expansion after privatization. Oum, YanE Yu (2008) conclude that, as privatized airports are more efficient, they are also more profitable. Noruzoliaee and Zhang (2015) suggest that increasing airport capacity depends on the efficiency linked to a higher level of investment by the operator in infrastructure. If another operator does not have the same capital contribution the trend is that it is less efficient than the other. Zhang and Zhang (2003) argue that airport capacity and its consequent expansion is generally seen as improving the quality of service by reducing or eliminating congestion problems resulting from the strong use of the existing airport, which is considered a negative externality and which presses the indicators down. Especially with regard to the movement of aircraft, and secondly, the ability to process passengers and cargo efficiently, as is the case with Hong Kong airport. The authors conclude that given the increasing demand and increasing capacity through large investments in airport infrastructure as a new lane is built. From the social point of view, airports are sub-optimal. Private airports tend to introduce capacity expansion later than comparable public airports, however the authors do not express an exact temporal universe.

There are indirect analyzes that privatization corroborates in some sense with the increase in demand given the expansion of airport capacity and efficiency and competition from the airports themselves, whose better managed costs are attractive to airlines since there is a tendency well-managed operating costs are lower and so airlines will prefer one airport to another, for example Zhang and Zhang (2003) and Noruzoliaee and Zhang (2015).

If privatization proves to be a success, its effects must be accounted for both at airport and airline demand. In addition, there is the possibility that an increase in the future demand for privatized airports should be explicitly considered in the asset valuation problem of pre-privatization and require an economic valuation study. Given an expectation of improvement of future demand. Airlines can consider the privatized airport as more attractive by frequency of flights or even consider it as a possible hub or a focal airport.

Megginson, Nash and Van Randenborgh (1994), and La Porta and López-de-Sillanes (1999) show that some increase in demand is induced following privatization episodes - a standard effect that has been observed in a large sample of companies , in a set of equally industries and countries. The current implementation of privatization depends on the model adopted by the government. It can be fully privatized and partially privatized, with the state as majority or minority partner. According to Graham (2008) and Carney and Mew (2003). The privatization of airports can be categorized into: Slice, offers, concession, financial proofing projects, and contract management.

Airport privatization can produce impacts on passenger demand through its airport infrastructure, regulation and efficiency, but these effects may be moderate or accentuated by the sequence of events dictated by the privatization schedule. There is a tendency that in the early stages of privatization, which consists of preparation, tendering process and all provisions prior to the transfer of control, may be anticipated actions by airlines that will affect demand, such as airport to another and the use of Code Share. In addition, even after the transfer of full management control, in case of capacity expansion,

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terminal and lane effects may affect demand in the short term. The short-term impact may materialize at least after one year particularly due to the increase in advertising allowed by the bidding process. The short-term and long-term effects of airport privatization can have a positive effect on demand, but due to the above mentioned temporary problems of terminal constructions and runways these may adversely affect demand. There is a suspicion that in the short term the magnitude of the effect of privatization is not so significant and that this will materialize in the long run, but it is important to empirically estimate these effects and to perform an efficiency benchmarking for the situational and future decision making.

Brazil has seen an increase in the demand for air transport, especially in the late 2000s. Traffic more than tripled since 2000, with 175 million passengers in 2013 versus 53.9 million in 2000. The rapid growth and appointment to host the 2014 World Cup and the 2016 Olympic Games forced the government to
being an investor and hence the main changes in the airport sector. The public company INFRAERO owned 67 airports throughout the country, the busiest were tendered. After several months of discussions, a privatization plan was launched on May 31, 2011. The tender with a bid for a long-term contract included the main airports São Paulo / Guarulhos - The GRU, the international portal of the and the largest hub in Latin America, Brasília - BSB, the most important and centrally located, and São Paulo / Viracopos - VCP, the only relevant and effective secondary airport operated by a carrier. On February 6, 2012, the auction of the three main airports collected a total of US $ 14 billion7. The Government granted concessions with 20 year contracts (GRU), 25 years (BSB) and 30 The contracts were signed on June 14, 2012 and the units are now managed by Specific Purpose Companies. Viracopos (VCP) in a property configuration in which INFRAERO still holds a 49% equity interest in each and participates in airport governance in proportion to its shareholding in the concessionaires, with were established in shareholders' agreements entered into between the parties. The concessions began on July 11 of the same year. The actual transfer dates of management control of INFRAERO to the new owners were November 15, 2012 (GRU and VCP) and December 1, 2012 (BSB). On December 20, 2012, the Antonio Carlos Jobim - Galeão International Airport in Rio de Janeiro and the Tancredo Neves - Confins International Airport in Minas Gerais were put on the auction. The second batch of concessions includes, in May 2014, the international airports of Rio de Janeiro - Galeão Antonio Carlos Jobim and Internacional Tancredo Neves - Confins. The first is obtained by the Consórcio Aeroportos do Futuro, formed by the Odebrecht (construction company involved in the Lava Jato operation) and Transport, with a 60% share, and Singapore Airport Operator CHANGI, with 40%. The second, Confins Airport, is sold by the Aero Brasil consortium formed by the Cia. De Participações em Concessões - CCR, with a 75% participation, Zurich Airport Operator Flughafen Zürich AG, with 24% and Munich Airport International Beteiligungs GMBH, with 1%. Immediately after privatization, airports underwent intense construction and capacity expansion to increase international traffic expected for the 2014 World Cup. Major projects at the three airports included the extension and refurbishment of the runway, ramp and apron, and implementation of new terminals, among others. However, many of the airport improvement projects have suffered delays in their works that have caused problems associated with longer check-in queues, greatly affecting the efficiency of passenger processing.

3 THEORETICAL MODEL

Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA) were also used to assess airport efficiency. The DEA is a benchmarking methodology widely used to estimate the technical efficiency of DMU's (Decision-Making Units). Presented by Charnes et al. (1978) and extended by Banker et al. (1984), the DEA method through linear programming evaluates the efficiency of the DMUs, buying units that perform similar operations but differ in the use of inputs and outputs. Initially,

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the method calculates the best practice frontier using a set of inputs and outputs, previously defined. The relative efficiency of each DMU is calculated based on the efficient border distance, ranging from zero to 1. The more inefficient the DMU is, the farther it is from the efficient frontier. Already the SFA is a parametric modeling method, introduced simultaneously by Aigner, Lovell and Schmidt (1977) and Meeusen and Van denk Broeck (1977). It starts from the definition of a functional relationship between inputs and outputs, incorporating a stochastic error term and a term that can be characterized as inefficiency.

Thus, four models were used to calculate airport efficiencies: (1) Model CRS / CCR (Charnes, Cooper and Rhodes, 1978); (2) Model VRS / BCC (Banker, Charnes and Cooper, 1984); (3) Model FDH (Deprins, Simar and Tulkens, 1984) and (4) SFA Model (Aigner, Lovell and Schmidt (1977); Meeusen and Van denk Broeck (1977)).

The CCR model is the model that initiated the DEA frontier analysis. It is also known as CRS (Constant Returns to Scale) model, that is, it assumes that any increase or decrease in inputs generates a proportional increase or decrease in the products. The BCC model is an extension of the CCR model, and is also known as the Variable Returns to Scale (VRS) model. Part of the assumption is that an increase in inputs may lead to an increase in output, not necessarily proportional, or even a decrease. The FDH (Free Dispossal Hull) model differs from the DEA technique by not assuming the convexity hypothesis and the FDH
generates the frontier from the comparisons of the effectively observed DMUs, while the DEA model generates the theoretical boundary, from the convex combination between the decision units.

The models can be oriented to inputs, outputs, or without guidance. The orientation to inputs indicates that the model aims at the reduction of inputs without changing the quantity of outputs. The orientation of the model for outputs aims to increase output while maintaining the same level of input consumption. Wanke (2012) discusses the lack of consensus regarding the orientation of DEA models applied to airport efficiency, and adopts the guidance of minimizing inputs, favoring the public service vision.
In this study we chose to adjust the DEA model with input orientation, since we wanted to reduce the inputs without changing the quantitative outputs. Thus, the aircraft movement was used with input, while the number of passengers, the air cargo and the mailbag were used with outputs.

The DEA models and the efficiency indices were adjusted and calculated for each of the years, thus presenting a longitudinal view of the efficiencies of each DMU, aiming at a more direct approach in the evaluation of the airports, allowing the measurement of the global average efficiency scores of the period analyzed, and the efficiency for each period separately, demonstrating the trend of performance. As in the FDH many airports showed efficiency equal to 1, it was decided to also use the super efficiency to enable the tie-breaker between them. As super efficiency is not limited to the 0-1 range, the following formula was used to be on the same scale as the other efficiencies: Efficiency = [(Super Efficiency-minf_0 (Super Efficiency)) / (maxf_0 (Super Efficiency) -minf_0 (Super Efficiency))] In Stochastic Frontier Analysis (SFA) specific assumptions are made regarding the distribution of inefficiency (eg, half-normal) to isolate noise from efficiency.

At DEA you can use Bootstrap to correct bias of efficiencies and estimate confidence intervals, recognizing that data is subject to random noise and seeking more consistent results. It should be noted that it is not possible to use the bootstrap when working with super efficiency. We assume that the probability distribution of the efficiencies observed in the DEA implies the truth, but it does not know the efficiency population of the DEA. Thus, if a sample of observed DEA efficiencies is selected with

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substitution, it would be like extracting a sample from the population itself. By repeatedly sampling from the observed DEA efficiencies, it is possible to construct an empirical sampling distribution for the DEA efficiencies of the units that is used to estimate the confidence intervals in the DEA efficiencies. Thus, the bootstrap yields confidence limits of efficiencies to capture the true efficient frontier within the specified range (Dyson and Shale, 2010). Therefore, in order to correct the efficiency values, the approach proposed by Simar and Wilson (1998, 2000), which provides the bootstrap efficiencies, was used for the inherent random error.

To evaluate the influence of privatization, population and GDP on bootstrap efficiency indexes RSV, CRS and FDH were adjusted Tobit regressions (Tobin, 1958). It is common in the DEA literature, in both cross-sectional and panel studies, to use Tobit regressions to model the efficiencies generated by the DEA model from environmental variables, since efficiencies are restricted to the range 0 to 1. The Tobit model is the most popular generalized linear model for censored or truncated dependent variables, in which it assumes normal distribution for uncensored observations (Smithson and Merkle, 2014). As the variable is limited in the range 0-1, the Tobit model would be censored left and right, so we could write the equation of the model as follows

$y_i^* = X\beta + \varepsilon_i$, com i = i-th airport.

$$y_i = \begin{cases} 0, & \text{if } y_i^* \leq 0 \\ y_i^*, & \text{if } 0 \leq y_i^* \leq 1 \\ 1, & \text{if } y_i^* \geq 1 \end{cases}$$

where y_i is the interest index to be modeled, FDH, CCR and BBC, X is matrix with all independent variables , β is the vector with the regression coefficients and ε_i the errors, with $\varepsilon_i \sim N(0, \sigma^2)$.

The interpretation of the Tobit model can not be performed in the same way as it is usually done on linear models, where β represents the increase of a unit in a given independent variable (x_p). In the Tobit model the value of β should be weighted by the probability that y_i is in the uncensored range. Thus, according to (Greene, 2003), the partial effect is given by:

$$\frac{\delta E[y_i|x]}{\delta x} = \beta . \text{Prob}(0 \leq y_i^* \leq 1)$$

In which $\text{Prob}(0 \leq y_i^* \leq 1)$ is given by $\phi\left(\frac{1-X\beta}{\sigma}\right) - \phi\left(\frac{0-X\beta}{\sigma}\right)$, being ϕ the funccion of cumulative distribution of normal. That is, informally, $\text{Prob}(0 \leq y_i^* \leq 1)$ is the proportion of uncensored data. In order to address the possible correlation between the responses of the same airport, the GEE method is known as Marginal Models and can be considered an extension of Generalized Linear Models (McCullagh and Nelder, 1989) that directly incorporate the correlation between measurements of the same sample unit.

The Backward method was used to select the variables. The Backward method is the procedure to remove the variable of greatest p-value, and this procedure is repeated until only the significant variables remain in the model. For the Backward method a level of 5% of significance was adopted.

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According to Bogetoft and Otto (2010), assuming that technology was given and that evaluating a particular company, then the scenario can be described as follows:

$x^k = (x_1^l, \dots, x_m^k) \in \mathbb{R}_+^m$to producer n outputs $y^k = (y_1^l, \dots, y_n^k) \in \mathbb{R}_+^n$.

The set of feasible production plans or input-output combinations available to firm k is given by the technology or set of production possibilities T:$T = \{(x, y) \in \mathbb{R}_+^n \times \mathbb{R}_+^m \mid x \text{ may produce } y\}$
The most commonly used approach to measuring efficiency in a general scenario is the strategy suggested by Debreu and Farrell, generally referred to simply as Farrell's efficiency. The idea is to ask if it is possible to reduce the input without changing the output. Seeking to process multiple inputs and outputs in a simple way, we seek a proportional reduction of all inputs. The efficiency based on Farrell's input or only the input efficiency of a plane (x, y) relative to a technology T is defined as:

$$E = \min \{E > 0 \mid (E\,x, y) \in T\}$$

That is, it is the maximum proportional contraction of all inputs x that allows us to produce y. Thus, if E = 0.8, we could have saved 20% of all inputs and produced the same outputs. Similarly, Farrell's output-based efficiency or output efficiency is defined as:

$$F = \max \{F > 0 \mid (x, F\,y) \in T\}$$

That is, the maximum proportional expansion of all outputs y which is feasible with the inputs x. Thus, a score of F = 1.3 suggests that we could expand production by 30% without spending additional resources. When combining the idea of minimal extrapolation with Farrell's idea of measuring efficiency as a proportional improvement, we have mathematical programs considered by many to be synonymous with the DEA approach. On the input side, Farrell's efficiency in the firm is measured as input efficiency:

$$E^o = E\big((x^o, y^o); T^*\big) = \min\{E \in \mathbb{R}_+ \mid (Ex^o, y^o) \in; T^*\}$$

Take the formula $T^*(\gamma)$, then:

$$\min_{E, \lambda^1, \dots, \lambda^K} \quad E$$

$$\text{subject to } Ex^o \geq \sum_{k=1}^{K} \lambda^k x^k,$$

$$y^o \leq \sum_{k=1}^{K} \lambda^k y^k,$$

$$\lambda \in \Lambda^K(\gamma).$$

In $\Lambda^K(\text{crs}) = \{\lambda \in \mathbb{R}_+^K \mid \sum_{k=1}^K \lambda^k \text{free}\} = \mathbb{R}_+^K$, $\Lambda^K(\text{vrs}) = \{\lambda \in \mathbb{R}_+^K \mid \sum_{k=1}^K \lambda^k = 1\}$, $\Lambda^K(\text{fdh}) = \{\lambda \in \mathbb{N}_+^K \mid \sum_{k=1}^K \lambda^k = 1\}$ and λ are the weights, that is, the relative importance of the pairs of DMUs. In this case the optimization problem is relatively simple. In the CRS and VRS cases, the programs are simple linear programming (LP) problems, and in the FDH case, they are mixed integer programming (MIP) problems with λ integer

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variables. Although the FDH model has been formulated similarly to the above model, the FDH model will not usually be solved using MIP routines since it is possible to rewrite the program as a series of simple problems that can be solved using a well-defined series of comparisons simple. It is easy to see, for example, that the input efficiency relative to FDH technology is:

$$E^{o}(fdh) = \min_{k:\, y^{k} \geq y^{0}} \quad \max_{i = 1, \ldots, m} \quad \frac{x_i^k}{x_i^0}$$

To understand these equations, note that to find the input efficiency of an FDH technology, we should look at all the companies that are producing more from the outputs to find a relevant comparator. We are looking for the comparator that makes the firm the least efficient, so we minimize the optimization of the output. The logic of the outcome-based measure in the FDH case is similar. As a result of these formulations, routines with two nested loops can be easily written which find results of FDH efficiency. According to Bogetoft and Otto (2010), consider a production function f. Based on the set of technology T, it is derived as:

$$f(x) = \max\{y \mid (x, y) \in T\}$$

Where x is an n-dimensional input vector and y is the output m = 1 dimensional. A priori it is assumed that the production function has a specific functional form, but that the details of this function as defined by the β parameters are unknown. That is, it is assumed that:

$$f(x) = f(x; \beta)$$

For some unknown vector of β parameters. It can be assumed that production is a Cobb-Douglas function:

$$y = \beta_0 x_1^{\beta_1} x_2^{\beta_2} \ldots x_m^{\beta_m}$$

With unknown values of $\beta_0, \beta_1, \beta_2, \ldots, \beta_m$.

The stochastic frontier models combine the term of efficiency u with the error term v, that is, the SFA models include a stochastic error term and a term that can be characterized as inefficiency.

The model looks like this after a log transformation:

$$y^k = f\left(x^k; \beta\right) + v^k - u^k$$

$$v^k \sim N(0, \sigma_v^2), \qquad u^k \sim N_+(0, \sigma_u^2), \qquad k = 1, \ldots, K.$$

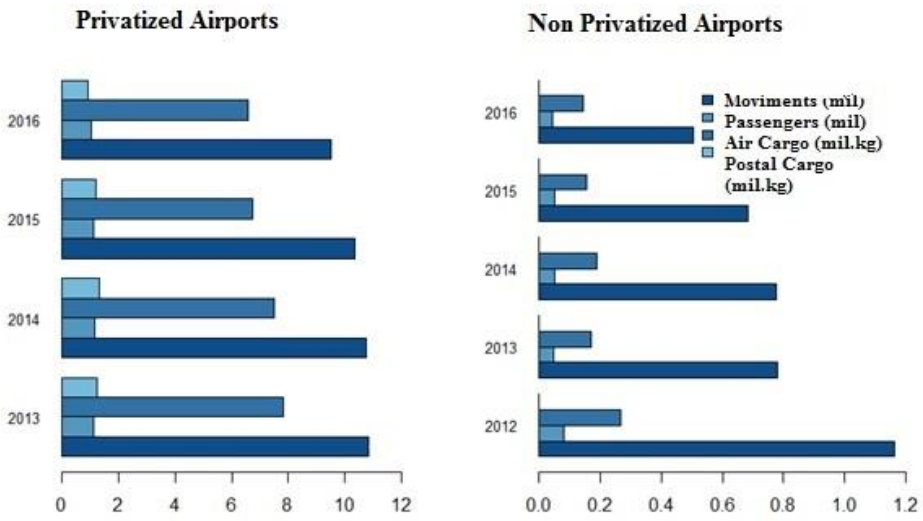
The term v represents the stochastic nature of the production process and possible measurement errors of the inputs and outputs, while the term u represents the possible inefficiency of the company. It is assumed that the terms v and u are independent. If u = 0, the firm is 100% efficient, and if u> 0 then there is some inefficiency. N + denotes a half-normal distribution, that is, a truncated normal distribution where the truncation point is 0 and the distribution is concentrated in the half-range $[0, \infty[$.

To estimate the SFA models, that is, to determine the values of the unknown parameters; β, σ_v^2 e σ_u^2, the principle of maximum likelihood is used. Thus, the parameter values are estimated as the values that make observations as likely as possible.

4 EMPIRICAL SECTION

There is clear evidence that private airports are the ones with the most traffic and passengers. However, as can be seen, the year 2013 compared to the year 2016 had a considerable amount in the passenger and handling requirements. It is also possible to realize that values fall over the years.

Fig.1 Privatized and non-privatized airport indicators



The median airports of Guarulhos, Galeão, Brasilia, Viracopos are airports that have moved the most loads during the pre and post privatization period for the period from 2012 to 2016. A caption of the airport acronyms is found at the end of this text.

Fig.2 Air Cargo Moviments (Median) million

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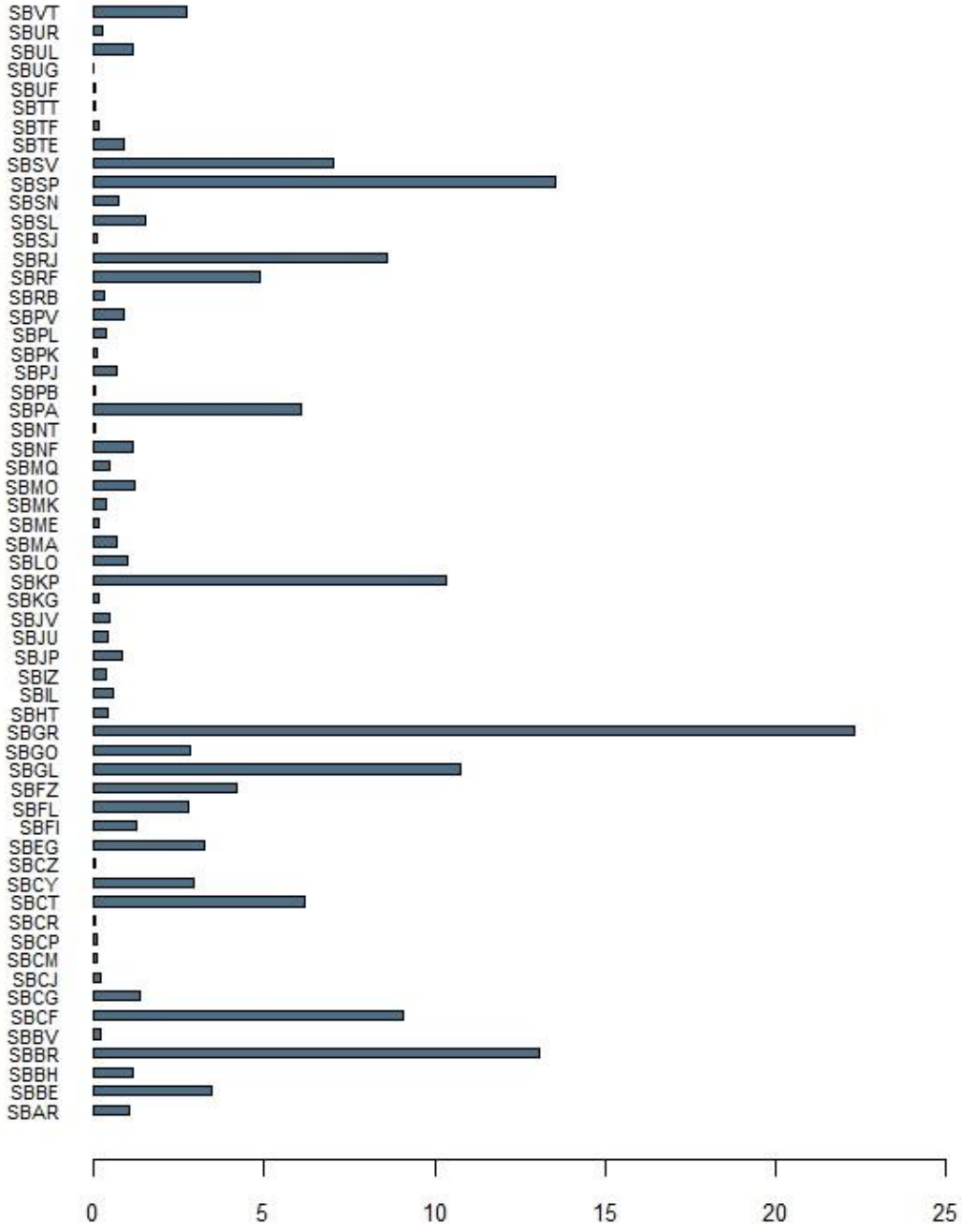

The median number of passengers transported between 2012 and 2016 by Guarulhos Airport (São Paulo) in more than the double of Rio de Janeiro shows a tendency to cluster

Fig.3 Median Passengers transported (millions).

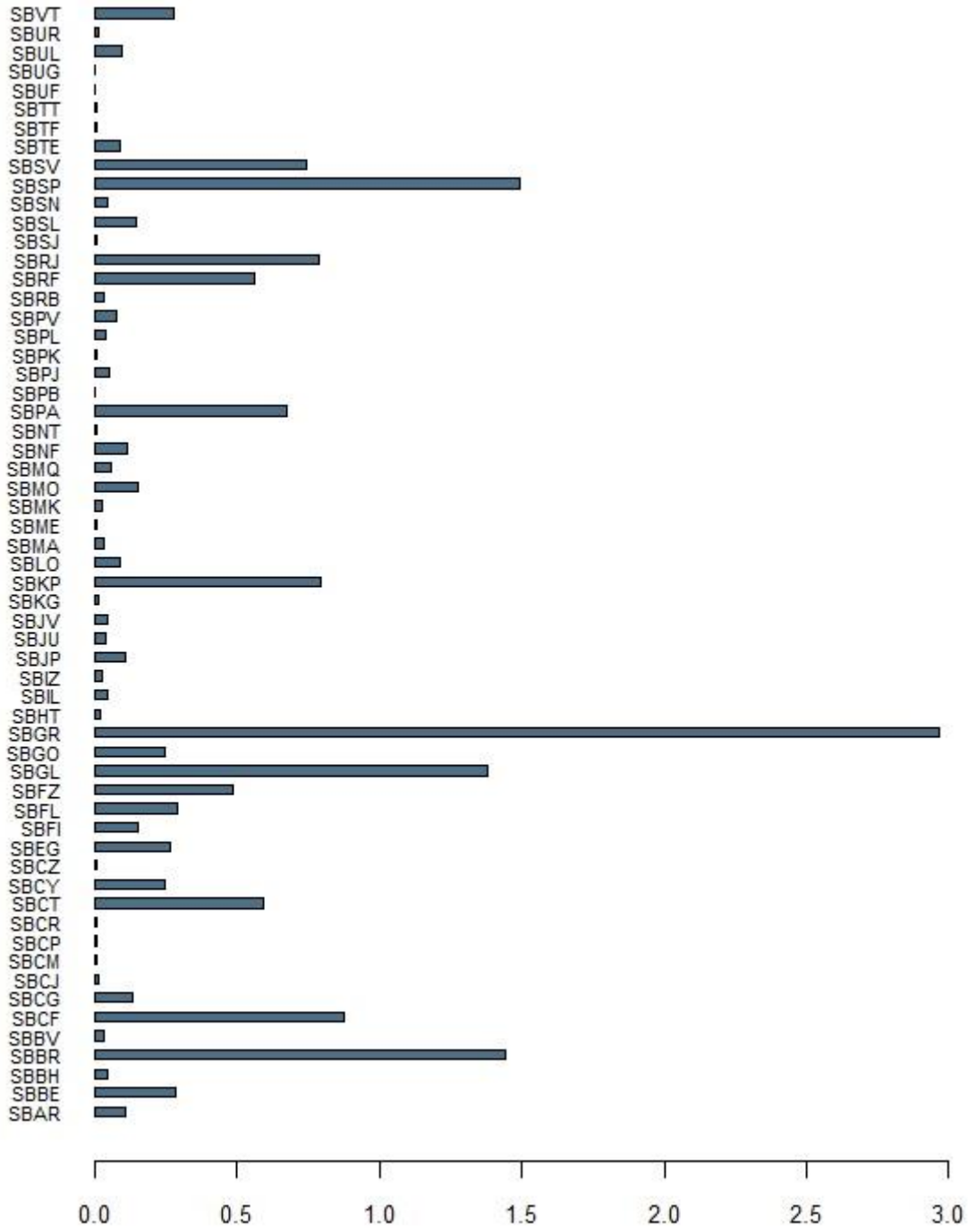

Figure 4 shows the transport median in millions of kilograms of air cargo, again showing Guarulhos Airport as the largest in the country in terms of cargo load. What concentrates most of the GDP in air services in a region of the country so that the model of competition between privatized airports needs specific regulation in order to avoid this situation.

Fig.4 Median - Air Cargo transportation (millions kg.)

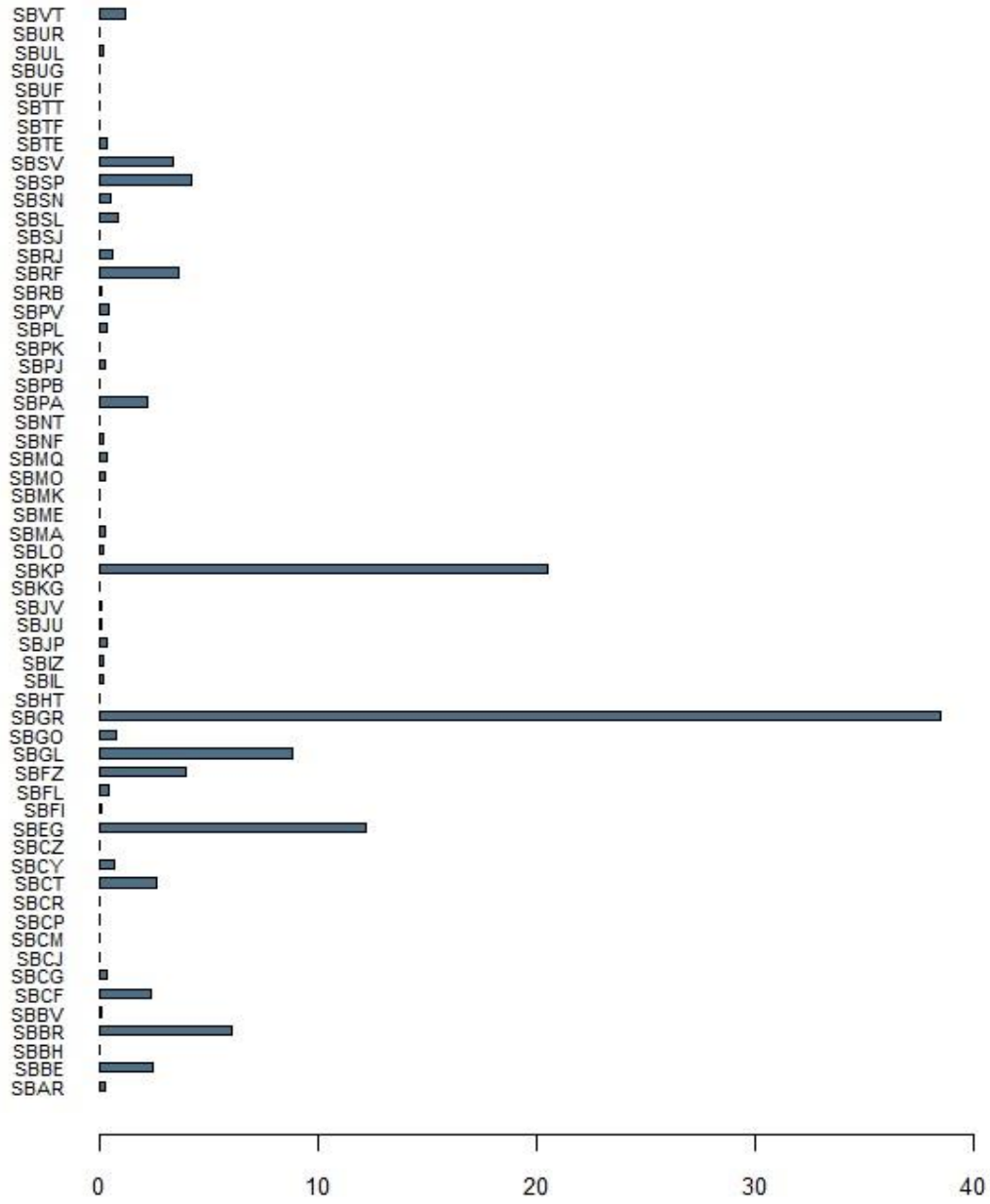

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Figure 5 shows the mean of postal cargo transported in millions of kilograms, which again corroborates the thesis that Guarulhos airport is a cluster. Fig.5 Median Postal Cargo transported (millions kg).

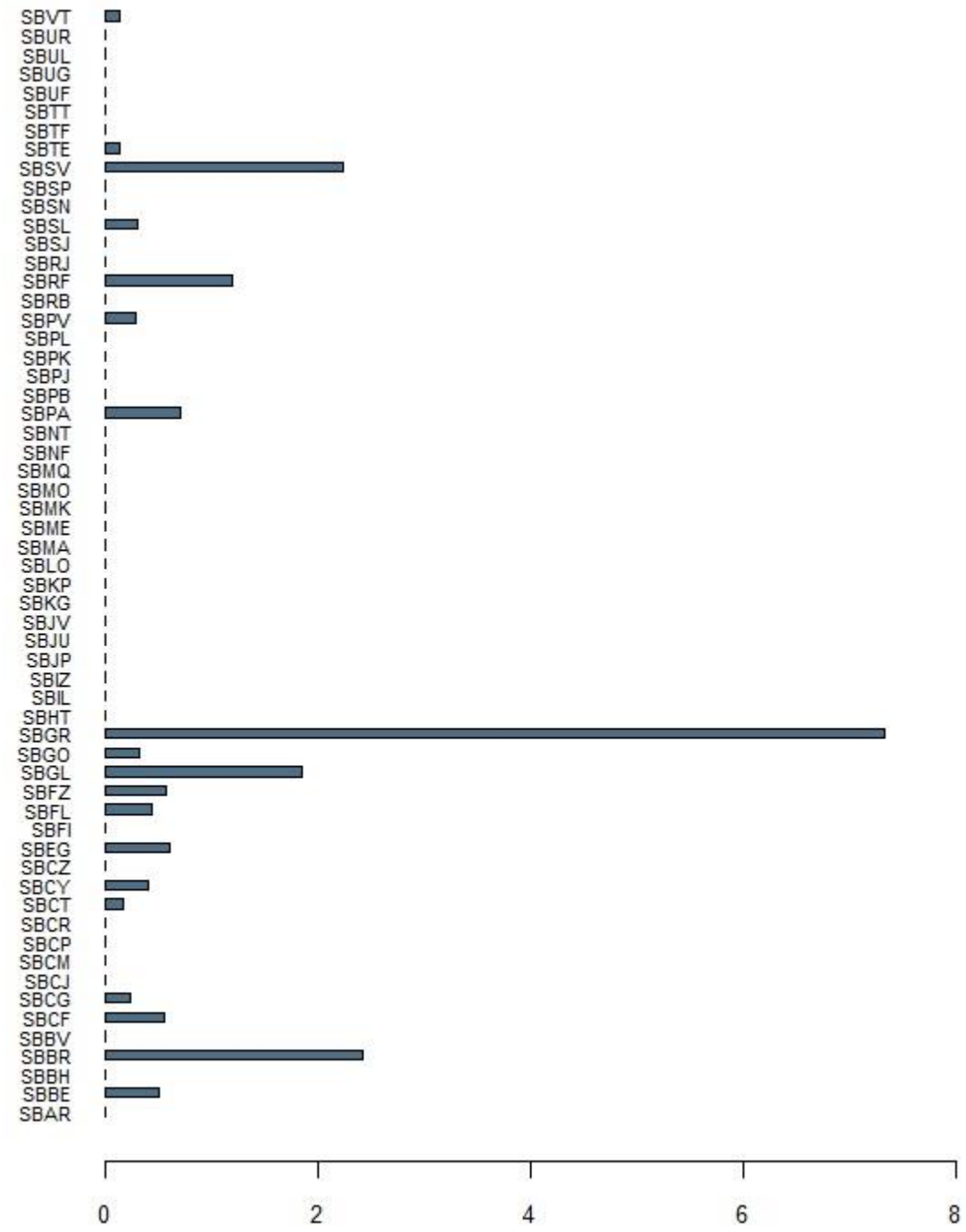
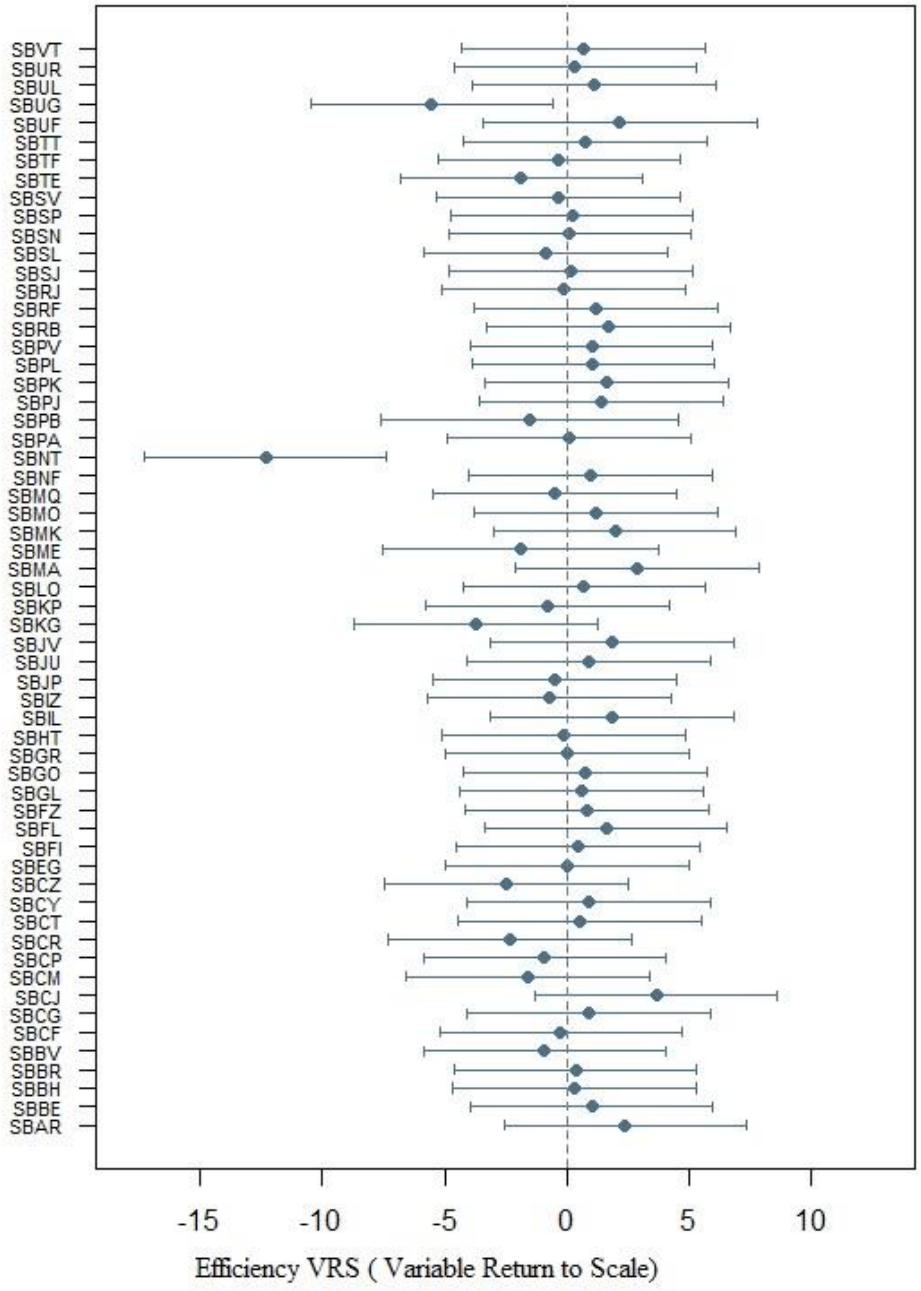


Figure 6 shows many inefficiencies in average of the Natal Airport and the Viracopos Airport that were privatized. Although the Guarulhos airport is the most relevant in the country in VRS, it does not present a high score, which, when checking the airport situation, shows that inefficiency may be due to congestion and flight delays, which would cause the airport to present results on average with

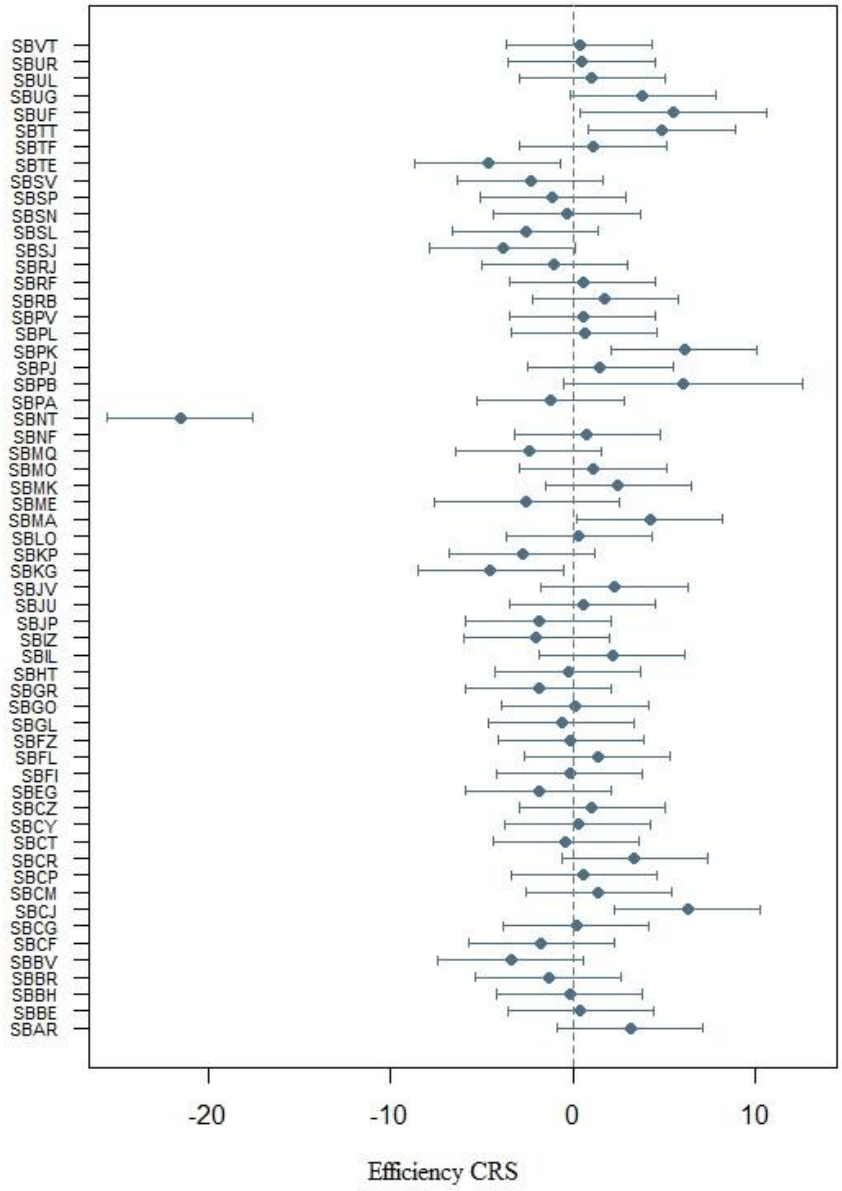
privatization. It should be noted that in this respect privatization did not produce favorable results, contrary to what the airport capacity could be given. This signals that something is missing.

Fig.6 Efficiency VRS (Variable Return to Scale) - 2012-2016 - Mean



For the purpose of comparison, a DEA-CRS efficiency frontier was developed in which Guarulhos airport is inefficient, Natal airport is an outlíry. Galeão airport is more efficient than Guarulhos airport. All are privatized. There are non-privatized airports that present better scores than those mentioned above.

Fig.7. Efficiency CRS 2012-2016 - Mean



Despite the use of super-efficiency in the FDH model, this proved to be inadequate, requiring greater improvement since it returned with a very large number of airports on average, 2012-2016, from 26 airports, including private and non-private airports. However, for comparison purposes, Guarulhos airport is not 100% efficient. What in theory can be compared with the DEA-VRS model, but presenting a slightly better score ..

Fig.8 FDH efficiency with superefficiency 2012-2016 - Mean

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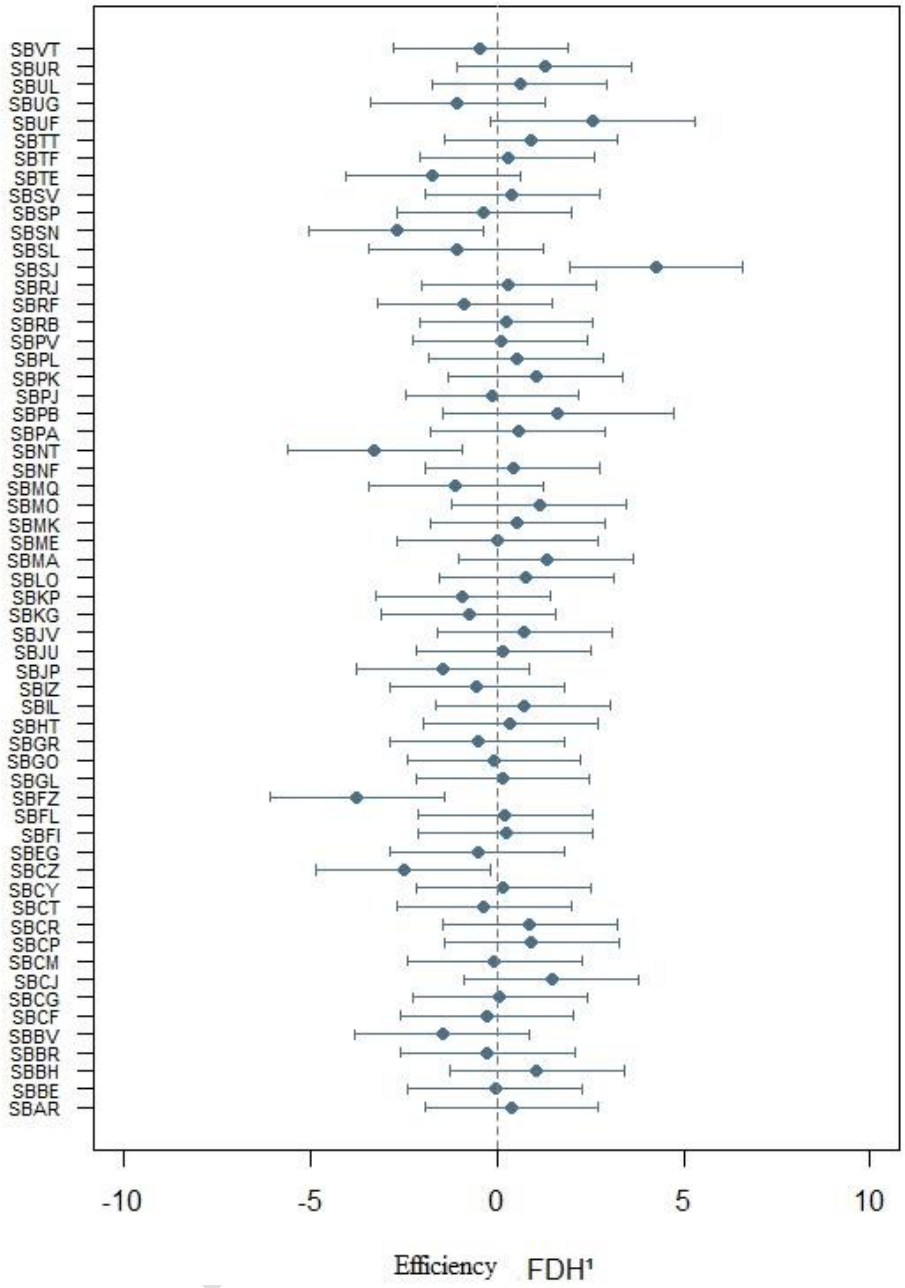

The SFA efficiency presented a filter which was expected so that the analysis presented some ouliars and all airports privatized and some not privatized proved to be efficient. Based on this methodology, it is possible to say that airports near the frontier of efficiency are close candidates for privatization. Among them are Vitória, Manaus, Belém, Joao Pessoa, Recife, Florianópolis, Curitiba, Goiânia, among others.

Fig.9 Efficiency SFA - Mean 2012-2016

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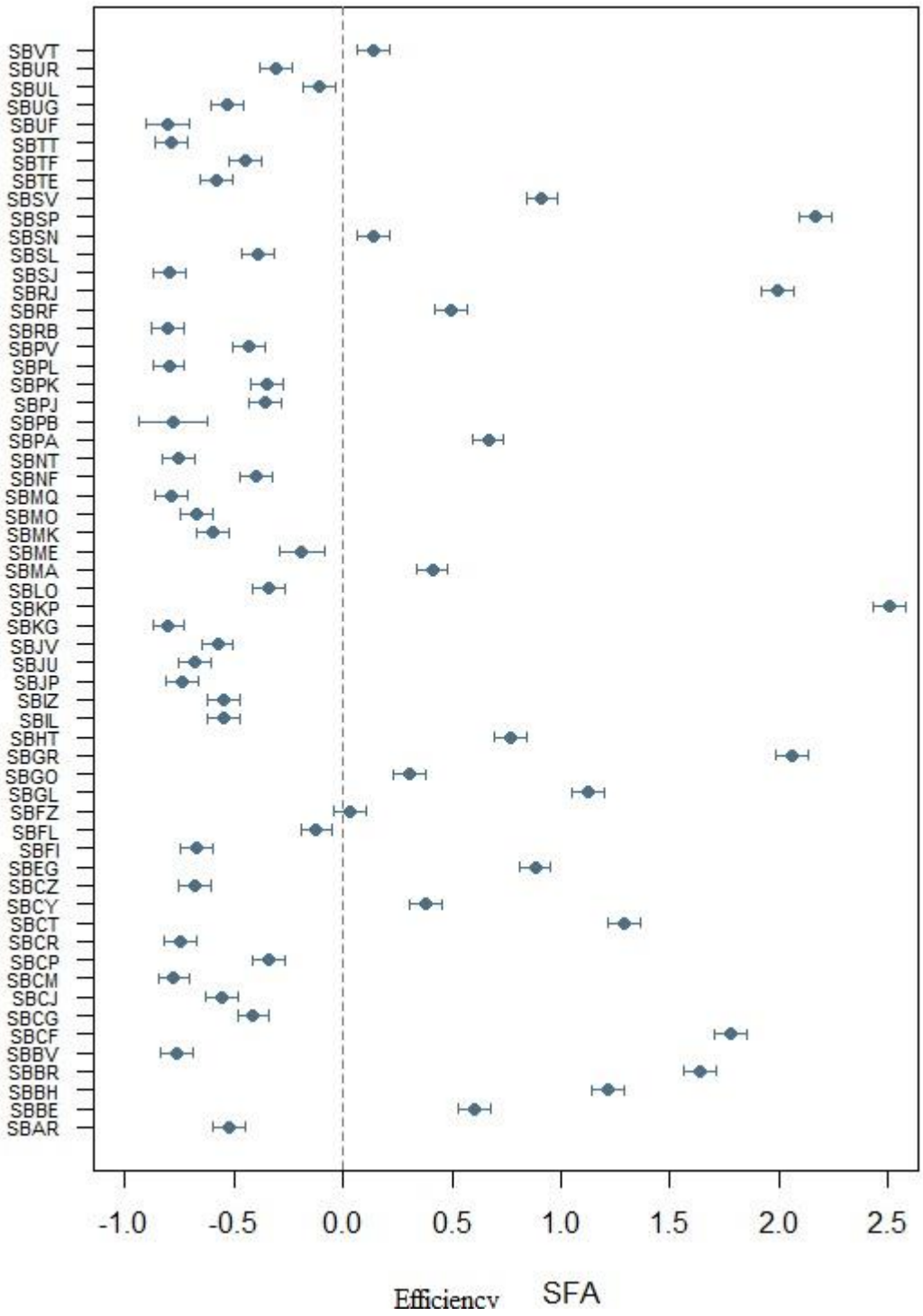

There was a positive and significant correlation between aircraft movement and VRS efficiency (r = 0.52), CRS (r = 0.52) and FDH (r = 0.51), that is, the higher the movement, the greater the tendency to be the efficiencies.

Table 1: Correlation between the components of the DEA model and efficiency.

Variáveis	Movements	Air cargo	Mailling	Number of Passengers	VRS	CRS	FDH	SFA
Moviments	1,00							
Air cargo	0,79	1,00						
Mailling	0,78	0,83	1,00					
Number of Passengers	0,99	0,81	0,85	1,00				
VRS	0,52	0,43	0,39	0,51	1,00			
CRS	0,52	0,40	0,40	0,51	0,96	1,00		
FDH[1]	0,51	0,77	0,67	0,55	0,58	0,55	1,00	
SFA	0,75	0,51	0,43	0,68	0,21	0,31	0,25	1,00

[1] Calculated from super efficiency

In order to visualize the correlations between the components of the DEA model and the efficiency, a perceptual map was constructed via Principal Component Analysis. The same is found below, and it is possible to state that: • The amount of variation explained by the two main components was 81.86% (64.96% of the first component and 16.90% of the second component), indicating that it is possible to obtain a good interpretation of the relationship between the variables interpreting only two dimensions. • All variables were positively correlated with each other, since their arrows point in the same direction. It should be noted that the correlation between the variables handling, number of passengers and air cargo was even stronger, as was the correlation between RSV and CRS efficiencies. • It should be noted that SBEG airports (Manaus International Airport) and SBSV (Salvador International Airport) presented the highest efficiency figures.

Fig. 10 Perceptual Map via Principal Component Analysis.

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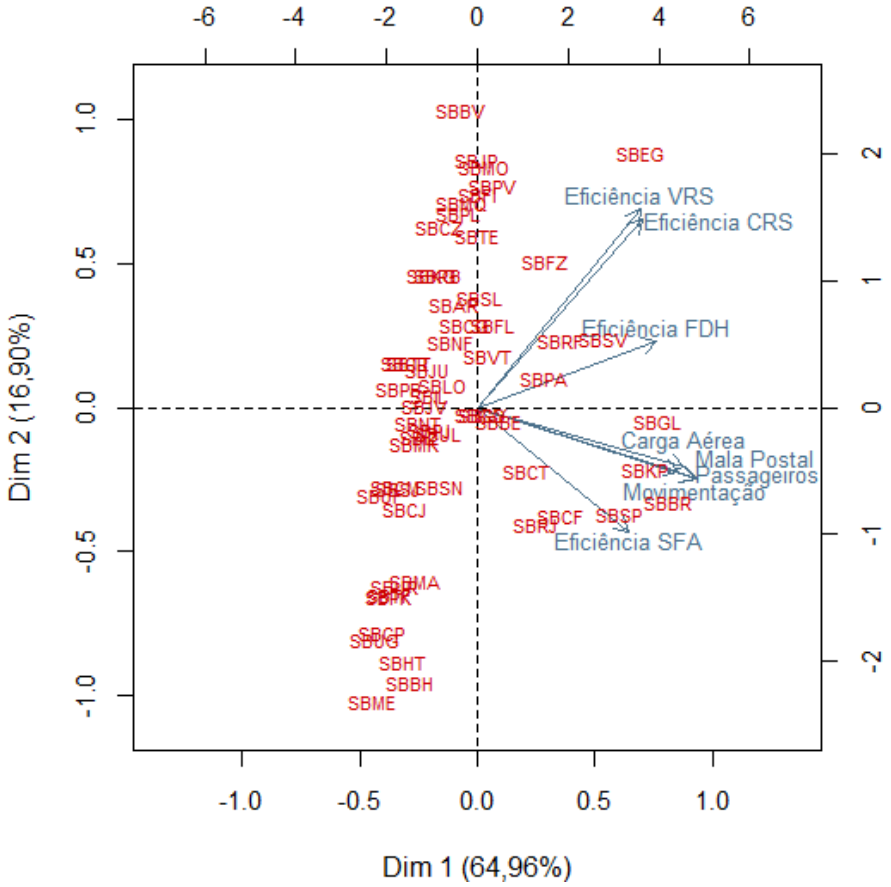

It can be seen from Fig. 11 that the airports were better run by the public company INFRAERO than after being privatized. One of the problems that may have influenced the Lava Jato operation where one Odebrecht company was one of the six other responsible for airport reform and the crisis, the situation worsened so that the flagrantly observed delays during the World Cup and Olympiad are one combination of these two factors.

Fig. 11. Description of the variables (moviments and air cargo) for the privatized airports 2012-2016.

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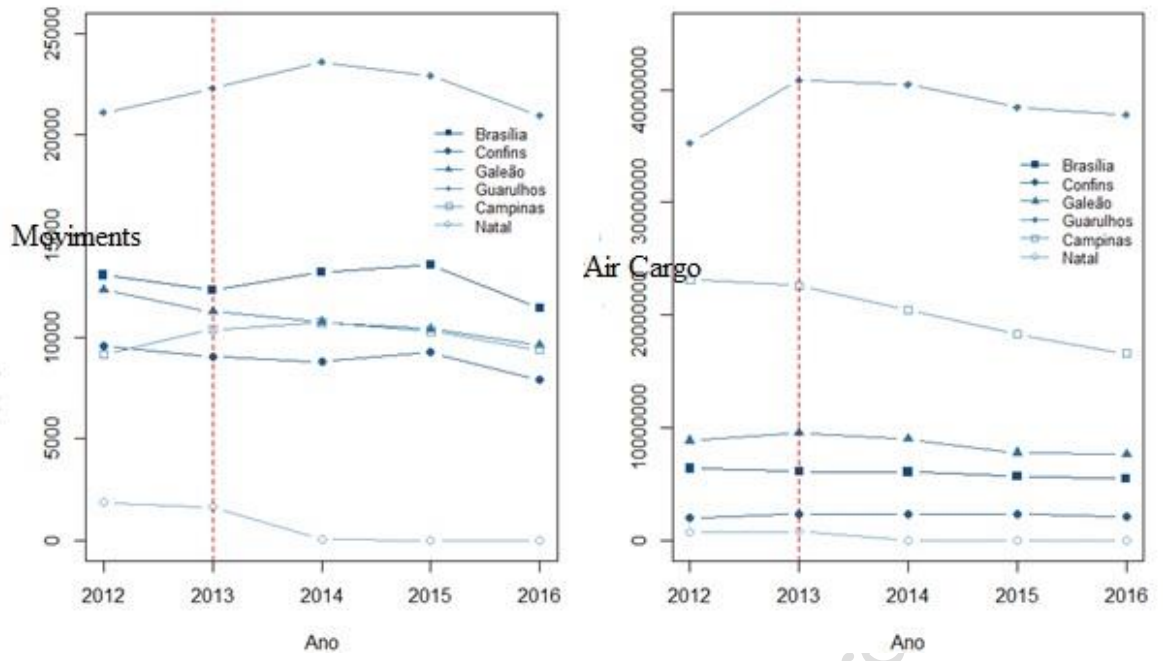
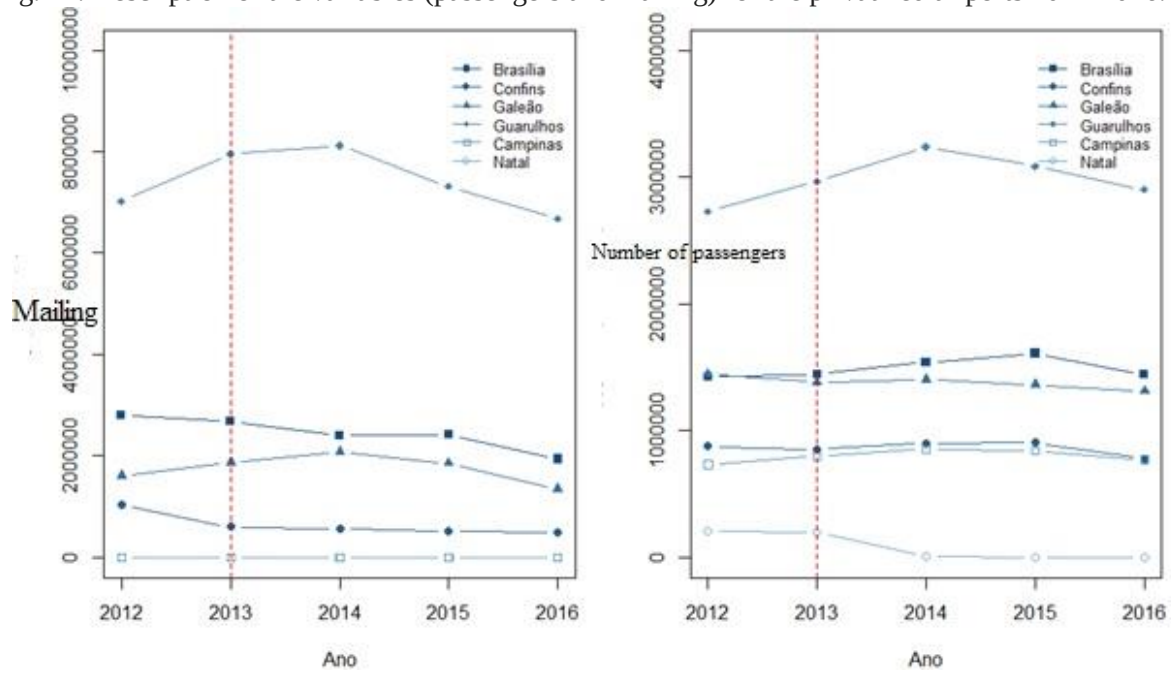


Fig. 12. Description of the variables (passengers and mailing) for the privatized airports 2012-2016.



The C-Means-DEA fuzzy technique was used to improve the efficiency scores in order to reduce the number of efficient airports and to approximate the results obtained here with the stochastic frontier. It is noticed that the Fuzzy C-Means returned with very great degree of pertinence between the airports and no airport was classified as 100% efficient.

Fig.13 Fuzzy C-Means DEA

Aeroporto	2012	2013	2014	2015	2016	Média
SBAR - Aeroporto de Aracaju	88,15%	99,55%	92,72%	88,50%	91,84%	92,15%
SBBE - Aeroporto Internacional de Belém	79,02%	86,40%	92,58%	85,27%	85,69%	85,79%
SBBH - Aeroporto de Belo Horizonte	93,84%	98,69%	92,72%	88,31%	89,31%	92,57%
SBBR - Aeroporto Internacional de Brasília	98,34%	99,38%	92,73%	89,02%	89,71%	93,84%
SBBV - Aeroporto Internacional de Boa Vista	99,83%	99,99%	92,73%	92,45%	92,65%	95,53%
SBCF - Aeroporto Internacional de Confins	99,44%	99,74%	92,72%	91,37%	92,65%	95,18%
SBCG - Aeroporto Internacional de Campo Grande	99,90%	86,39%	92,72%	88,68%	86,94%	90,73%
SBCJ - Aeroporto de Carajás	86,66%	93,95%	93,58%	99,91%	99,89%	94,60%
SBCM - Aeroporto de Criciúma	90,02%	97,56%	92,69%	85,55%	86,33%	90,43%
SBCP - Aeroporto Internacional de Campos	87,67%	99,95%	93,13%	99,98%	99,98%	96,14%
SBCR - Aeroporto Internacional de Corumbá	91,11%	97,36%	99,47%	99,99%	99,99%	97,58%
SBCT - Aeroporto Internacional de Curitiba	90,61%	95,27%	92,73%	92,45%	92,09%	92,63%
SBCY - Aeroporto Internacional de Cuiabá	88,67%	99,84%	92,73%	89,93%	89,71%	92,18%
SBCZ - Aeroporto Internacional de Cruzeiro do Sul	87,56%	96,04%	92,73%	91,95%	92,09%	92,07%
SBEG - Aeroporto Internacional de Manaus	99,49%	99,90%	96,37%	99,98%	99,98%	99,14%
SBFI - Aeroporto Internacional de Foz do Iguaçu	82,76%	93,38%	92,73%	90,94%	91,60%	90,28%
SBFL - Aeroporto Internacional de Florianópolis	93,67%	99,98%	92,73%	94,19%	94,66%	95,05%
SBFZ - Aeroporto Internacional de Fortaleza	93,84%	97,84%	92,73%	90,94%	91,84%	93,44%
SBGL - Aeroporto Internacional do Rio de Janeiro/Galeão	85,92%	94,41%	92,72%	90,13%	90,90%	90,82%
SBGO - Aeroporto de Goiânia	93,13%	94,24%	92,73%	93,96%	94,35%	93,68%
SBGR - Aeroporto Internacional de São Paulo/Guarulhos	97,58%	98,20%	92,73%	94,61%	95,10%	95,64%
SBHT - Aeroporto de Altamira	87,19%	98,88%	92,73%	89,43%	91,18%	91,88%
SBIL - Aeroporto de Ilhéus	87,48%	95,13%	92,76%	99,28%	99,16%	94,76%
SBIZ - Aeroporto de Imperatriz	87,41%	99,05%	92,73%	98,49%	97,06%	94,95%
SBJP - Aeroporto Internacional de João Pessoa	87,66%	96,34%	92,69%	85,34%	85,81%	89,57%
SBJU - Aeroporto de Juazeiro do Norte	97,58%	99,94%	92,77%	99,23%	98,72%	97,65%
SBJV - Aeroporto de Joinville	88,81%	100,00%	92,73%	92,45%	92,65%	93,33%
SBKG - Aeroporto de Campina Grande	84,06%	94,15%	92,73%	92,45%	92,65%	91,21%
SBKP - Aeroporto Internacional de Campinas/Viracopos	88,60%	95,82%	92,73%	90,94%	91,60%	91,94%
SBLO - Aeroporto de Londrina	74,90%	85,41%	85,46%	84,90%	85,30%	83,19%
SBMA - Aeroporto de Marabá	83,24%	93,73%	89,82%	92,45%	92,65%	90,38%
SBME - Aeroporto de Macaé	85,52%	95,13%	85,73%	92,31%	92,54%	90,25%
SBMK - Aeroporto de Montes Claros	76,11%	87,63%	87,46%	92,44%	92,65%	87,26%
SBMO - Aeroporto Internacional de Maceió	81,39%	91,23%	93,11%	92,45%	92,65%	90,17%
SBMQ - Aeroporto Internacional de Macapá	87,81%	99,58%	92,73%	92,45%	92,65%	93,04%
SBNF - Aeroporto Internacional de Navegantes	79,03%	86,38%	85,96%	92,45%	92,65%	87,09%
SBNT - Aeroporto Internacional de Natal/Augusto Severo	80,34%	92,43%	99,93%	92,90%	93,01%	91,72%
SBPA - Aeroporto Internacional de Porto Alegre	87,48%	95,13%	90,30%	92,45%	92,65%	91,60%
SBPB - Aeroporto Internacional de Parnaíba	87,45%	94,52%	98,69%	92,69%	92,87%	93,24%
SBPJ - Aeroporto de Palmas	93,53%	100,00%	100,00%	99,72%	99,87%	98,62%
SBPK - Aeroporto Internacional de Pelotas	87,43%	94,40%	92,30%	92,45%	92,65%	91,85%
SBPL - Aeroporto Internacional de Petrolina	87,69%	95,21%	91,52%	92,45%	92,65%	91,90%
SBPV - Aeroporto Internacional de Porto Velho	87,48%	95,13%	92,73%	92,45%	92,65%	92,09%
SBRB - Aeroporto de Rio Branco	87,95%	95,32%	99,98%	95,19%	94,56%	94,60%
SBRF - Aeroporto Internacional de Recife	93,14%	99,98%	92,17%	92,45%	92,65%	94,08%
SBRJ - Aeroporto Santos-Dumont	89,11%	93,75%	92,34%	92,45%	92,65%	92,06%
SBSJ - Aeroporto Internacional de São José dos Campos	93,77%	100,00%	92,07%	92,45%	92,65%	94,19%
SBSL - Aeroporto Internacional de São Luiz	87,48%	95,13%	94,01%	92,45%	92,65%	92,34%
SBSN - Aeroporto Internacional de Santarém	82,31%	93,10%	90,30%	92,45%	92,65%	90,16%
SBSP - Aeroporto de Congonhas	87,47%	95,12%	94,55%	92,45%	92,65%	92,45%
SBSV - Aeroporto Internacional de Salvador	87,49%	95,13%	90,30%	92,45%	92,65%	91,60%
SBTE - Aeroporto de Teresina	87,26%	95,09%	99,01%	92,49%	92,67%	93,30%
SBTF - Aeroporto de Tefé	87,48%	95,13%	95,15%	92,45%	92,65%	92,57%
SBTT - Aeroporto Internacional de Tabatinga	87,47%	95,12%	100,00%	92,45%	92,65%	93,54%
SBUF - Aeroporto de Paulo Afonso	88,35%	95,44%	93,68%	92,44%	92,62%	92,51%
SBUG - Aeroporto Internacional de Uruguaiana	86,07%	94,89%	95,84%	92,45%	92,65%	92,38%
SBUL - Aeroporto de Uberlândia	88,53%	95,51%	92,73%	92,45%	92,65%	92,37%
SBUR - Aeroporto de Uberaba	87,48%	95,13%	91,44%	92,45%	92,65%	91,83%
SBVT - Aeroporto Internacional de Vitória	87,46%	95,12%	85,46%	92,45%	92,65%	90,63%

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In 2017, the domestic air transport market showed a reduction in the number of flights, with 2.8% below 2016. The 20 largest airports accounted for 82.3% of the domestic departures. The three airports with the highest number of departures were Guarulhos / SP (11.1%), Congonhas / SP (10.8%) and Brasília / DF (7.7%), which together accounted for 29.7% of departures in domestic flights. The equations of the final models are presented below of Regression Tobit VRS:

: Equation of Regressão Tobit VRS:

$$E(Y) = 0{,}674 + 0{,}208 \times I(Privatization = Yes)$$

: Equation of Regressão Tobit CRS:

$$E(Y) = -0{,}863 + 0{,}189 \times I(Privatization = Yes) + 0{,}007 \times Population$$

: Equation of Regressão Tobit FDH[1]:

$$E(Y) = 0{,}839 - 0{,}003 \times População$$

: Equation of Regressão Tobit SFA:

$$E(Y) = 5{,}388 + 0{,}260 \times I(Privatization = Yes) - 0{,}023 \times Population - 0{,}004 \times PIB$$

Tobit regression para a eficiência.

	Font	Inicial Model				Final Modelo			
		β	E.P. (β)	Valor-p	β*P(NC)	β	E.P. (β)	Valor-p	β*P(NC)
VRS	Intercepto	0,915	1,561	0,558	-	0,674	0,028	0,000	-
	Privatization = Yes	0,209	0,097	0,031	0,190	0,208	0,096	0,031	0,189
	Population(millions)	-0,001	0,008	0,877	-0,001				
	GDP	0,000	0,007	0,954	0,000				
CRS	Intercepto	-1,544	1,361	0,257	-	-0,863	0,764	0,259	-
	Privatization = Yes	0,188	0,108	0,084	0,175	0,189	0,107	0,078	0,176
	Population(millions)	0,011	0,007	0,109	0,010	0,007	0,004	0,049	0,007
	GDP	0,003	0,006	0,583	0,003				
FDH[1]	Intercepto	1,215	1,008	0,228	-	0,839	0,384	0,029	-
	Privatization = Yes	0,172	0,136	0,206	0,162				
	Population(millions	-0,005	0,005	0,298	-0,005	-0,003	0,002	0,084	-0,003
	GDP	0,000	0,004	0,990	0,000				
SFA	Intercepto	5,388	0,695	0,000	-	5,388	0,695	0,000	-
	Privatization = Yes	0,260	0,077	0,001	0,260	0,260	0,077	0,001	0,260
	Population(millions	-0,023	0,003	0,000	-0,023	-0,023	0,003	0,000	-0,023
	GDP	-0,004	0,002	0,063	-0,004	-0,004	0,002	0,063	-0,004

[1] Calculed from super efficiency

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Efficiencies for 2017, 2018 e 2019.

		Variables	Estimated Efficiency
VRS	2017	Privatization = no	0,674
		Privatization = yes	0,882
	2018	Privatization = no	0,674
		Privatization = yes	0,882
	2019	Privatization =no	0,674
		Privatization = yes	0,882
CRS	2017	Population = 211,6056 millions / Privatization = no	0,618
		Population = 211,6056 millions / Privatization = yes	0,807
	2018	Population = 213,5100 millions / Privatization = no	0,632
		Population = 213,5100 millions / Privatization = yes	0,821
	2019	Population = 215,4316 millions / Privatization = no	0,645
		Population = 215,4316 millions / Privatization = yes	0,834
FDH[1]	2017	Population = 211,6056 millions	0,204
	2018	Population = 213,5100 millions	0,198
	2019	Population = 215,4316 millions	0,193
CRS	2017	Population = 211,6056 millions / PIB = 0,30 / Privatization = No	0,520
		Population = 211,6056 millions / PIB = 0,30 / Privatization = yes	0,780
	2018	Population = 213,5100 millions / PIB = 2,50 / Privatization = no	0,467

5 CONCLUSION

This work has provided some evidence that privatization alone has not led to airport efficiency. With privatization there is a tendency to improve its profitability by diversifying its business and other non-aeronautical activities. Probably the most surprising result of this analysis is that airports that were 100% public (INFRAERO) signaled that they were efficient ex ante privatization. Given that airports operated 100% by Infraero therefore public, they were almost as efficient as airports with 100% or a majority stake in the private sector seems to be important for participation in airports when seeking private sector financing or participation in the ownership and management of airports . Airports with greater private participation (including 100% private ownership) can not achieve much greater efficiency than the 100% government at some airports. It is possible to question why privatization has not been able to improve the productivity of all airports. In theory, there was an improvement and there will be an increase in efficiency, but this effect was not clear if it was actually given or only due to

privatization.The researchers pointed out that the empirical results of efficiency analysis may depend on the method of measurement used OUM et.al., (1999). Parametric and non-parametric methods were tested. The best results were to some extent shared by the stochastic frontier. The other methodologies such as various forms of DEA, Free Disposal Hull and Fuzzy C-Means DEA were tested and different empirical results were achieved. Some of the findings here are likely to be controversial, it is important to test different measurement methodologies before reaching a firm conclusion about the effects of privatization on airports.

By the presented methods, the studies corroborate with previous findings. Most airports benefit from increasing returns to scale. It can be said that the airports administered by INFRAERO were more efficient than after privatization.

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APPENDIX A

Airports and its identification code

Aeroporto
SBAR - Aeroporto de Aracaju
SBBE - Aeroporto Internacional de Belém
SBBH - Aeroporto de Belo Horizonte
SBBR - Aeroporto Internacional de Brasília
SBBV - Aeroporto Internacional de Boa Vista
SBCF - Aeroporto Internacional de Confins
SBCG - Aeroporto Internacional de Campo Grande
SBCJ - Aeroporto de Carajás
SBCM - Aeroporto de Criciúma
SBCP - Aeroporto Internacional de Campos
SBCR - Aeroporto Internacional de Corumbá
SBCT - Aeroporto Internacional de Curitiba
SBCY - Aeroporto Internacional de Cuiabá
SBCZ - Aeroporto Internacional de Cruzeiro do Sul
SBEG - Aeroporto Internacional de Manaus
SBFI - Aeroporto Internacional de Foz do Iguaçu
SBFL - Aeroporto Internacional de Florianópolis
SBFZ - Aeroporto Internacional de Fortaleza
SBGL - Aeroporto Internacional do Rio de Janeiro/Galeão
SBGO - Aeroporto de Goiânia
SBGR - Aeroporto Internacional de São Paulo/Guarulhos
SBHT - Aeroporto de Altamira
SBIL - Aeroporto de Ilhéus
SBIZ - Aeroporto de Imperatriz
SBJP - Aeroporto Internacional de João Pessoa
SBJU - Aeroporto de Juazeiro do Norte
SBJV - Aeroporto de Joinville
SBKG - Aeroporto de Campina Grande
SBKP - Aeroporto Internacional de Campinas/Viracopos
SBLO - Aeroporto de Londrina
SBMA - Aeroporto de Marabá
SBME - Aeroporto de Macaé
SBMK - Aeroporto de Montes Claros
SBMO - Aeroporto Internacional de Maceió
SBMQ - Aeroporto Internacional de Macapá
SBNF - Aeroporto Internacional de Navegantes
SBNT - Aeroporto Internacional de Natal/Augusto Severo
SBPA - Aeroporto Internacional de Porto Alegre
SBPB - Aeroporto Internacional de Parnaíba
SBPJ - Aeroporto de Palmas
SBPK - Aeroporto Internacional de Pelotas
SBPL - Aeroporto Internacional de Petrolina
SBPV - Aeroporto Internacional de Porto Velho
SBRB - Aeroporto de Rio Branco
SBRF - Aeroporto Internacional de Recife
SBRJ - Aeroporto Santos-Dumont
SBSJ - Aeroporto Internacional de São José dos Campos
SBSL - Aeroporto Internacional de São Luiz
SBSN - Aeroporto Internacional de Santarém
SBSP - Aeroporto de Congonhas
SBSV - Aeroporto Internacional de Salvador
SBTE - Aeroporto de Teresina
SBTF - Aeroporto de Tefé
SBTT - Aeroporto Internacional de Tabatinga
SBUF - Aeroporto de Paulo Afonso
SBUG - Aeroporto Internacional de Uruguaiana
SBUL - Aeroporto de Uberlândia
SBUR - Aeroporto de Uberaba
SBVT - Aeroporto Internacional de Vitória

APPENDIX B

Brazil GDP

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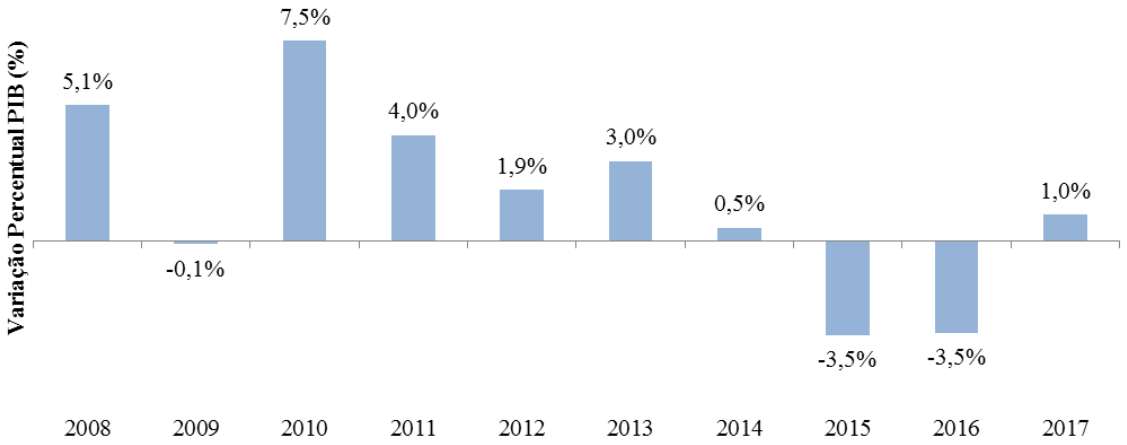

APPENDIX C

Efficiency Ranks by Airport by Method - Mean

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Table 2 - Efficiency by airport - mean.

Airport	VRS		CRS		FDH		FDH[1]		SFA	
	Mean	Rank	Média	Rank	Efic.	Rank	Média	Rank	Efic.	Rank
SBAR - Aero	0,739	22	0,733	20	0,933	34	0,116	40	0,522	35
SBBE - Aero	0,669	32	0,668	30	1	1	0,154	23	0,735	14
SBBH - Aero	0,305	57	0,302	52	0,493	57	0,046	58	0,819	8
SBBR - Aero	0,872	12	0,87	10	1	1	0,219	17	0,871	6
SBBV - Aero	0,913	5	0,903	5	1	1	0,191	19	0,306	56
SBCF - Aero	0,719	24	0,716	23	1	1	0,148	27	0,887	5
SBCG - Aero	0,704	27	0,701	26	1	1	0,165	22	0,552	32
SBCJ - Aero	0,425	48	0,4	46	0,82	44	0,107	43	0,513	39
SBCM - Aero	0,434	47	0,352	48	0,807	46	0,118	39	0,42	48
SBCP - Aero	0,281	58	0,223	57	0,51	55	0,049	57	0,568	26
SBCR - Aero	0,593	37	0,417	45	0,946	33	0,138	31	0,298	57
SBCT - Aero	0,712	25	0,71	24	0,98	28	0,127	35	0,828	7
SBCY - Aero	0,668	33	0,666	31	1	1	0,144	28	0,701	17
SBCZ - Aero	0,739	21	0,602	35	1	1	0,322	3	0,271	59
SBEG - Aero	1	1	1	1	1	1	1	1	0,774	11
SBFI - Aero	0,873	11	0,865	11	0,993	27	0,185	20	0,473	43
SBFL - Aero	0,773	18	0,771	17	1	1	0,152	24	0,615	23
SBFZ - Aero	0,897	8	0,893	8	1	1	0,279	6	0,643	21
SBGL - Aero	0,946	3	0,941	3	1	1	0,259	11	0,807	9
SBGO - Aero	0,672	31	0,669	29	1	1	0,129	34	0,69	18
SBGR - Aero	1	1	1	1	1	1	1	1	0,92	3
SBHT - Aero	0,307	56	0,293	53	0,505	56	0,05	56	0,759	12
SBIL - Aero	0,594	36	0,587	36	0,867	38	0,106	44	0,515	38
SBIZ - Aero	0,526	44	0,518	40	0,871	37	0,109	41	0,516	37
SBJP - Aero	0,902	7	0,894	7	1	1	0,2	18	0,443	46
SBJU - Aero	0,613	35	0,604	34	0,852	39	0,103	45	0,469	45
SBJV - Aero	0,577	40	0,571	38	0,807	45	0,093	48	0,506	40
SBKG - Aero	0,686	30	0,629	33	1	1	0,219	16	0,334	53
SBKP - Aero	0,88	10	0,72	22	1	1	0,285	5	0,969	1
SBLO - Aero	0,641	34	0,635	32	0,851	40	0,095	46	0,568	27
SBMA - Aero	0,397	50	0,392	47	0,668	51	0,073	53	0,706	16
SBME - Aero	0,199	59	0,145	58	0,372	59	0,03	59	0,601	24
SBMK - Aero	0,519	45	0,512	41	0,694	50	0,075	51	0,499	42
SBMO - Aero	0,908	6	0,9	6	1	1	0,22	15	0,472	44
SBMQ - Aero	0,813	16	0,807	16	1	1	0,229	13	0,412	49
SBNF - Aero	0,7	28	0,694	27	0,922	35	0,109	42	0,554	31
SBNT - Aero	0,552	43	0,476	43	0,6	53	0,127	36	0,433	47
SBPA - Aero	0,825	15	0,821	13	1	1	0,152	25	0,744	13
SBPB - Aero	0,573	41	0,347	49	0,849	42	0,131	33	0,294	58
SBPJ - Aero	0,56	42	0,555	39	0,877	36	0,119	37	0,565	29
SBPK - Aero	0,334	54	0,258	56	0,583	54	0,059	55	0,567	28
SBPL - Aero	0,77	19	0,763	18	1	1	0,247	12	0,399	51
SBPV - Aero	0,891	9	0,882	9	1	1	0,26	9	0,546	33
SBRB - Aero	0,712	26	0,703	25	0,967	31	0,14	30	0,395	52
SBRF - Aero	0,825	13	0,823	12	1	1	0,276	7	0,719	15
SBRJ - Aero	0,687	29	0,681	28	0,979	29	0,119	38	0,912	4
SBSJ - Aero	0,368	51	0,336	50	0,85	41	0,174	21	0,406	50
SBSL - Aero	0,728	23	0,723	21	1	1	0,26	10	0,557	30
SBSN - Aero	0,473	46	0,465	44	0,954	32	0,227	14	0,662	19
SBSP - Aero	0,825	14	0,818	14	0,972	30	0,14	29	0,932	2
SBSV - Aero	0,94	4	0,931	4	1	1	0,285	4	0,779	10
SBTE - Aero	0,811	17	0,81	15	1	1	0,262	8	0,505	41
SBTF - Aero	0,32	55	0,272	55	0,744	48	0,083	49	0,543	34
SBTT - Aero	0,581	39	0,481	42	0,837	43	0,133	32	0,324	55
SBUF - Aero	0,403	49	0,275	54	0,662	52	0,094	47	0,328	54
SBUG - Aero	0,339	52	0,1	59	0,429	58	0,072	54	0,519	36
SBUL - Aero	0,591	38	0,586	37	0,757	47	0,083	50	0,617	22
SBUR - Aero	0,337	53	0,32	51	0,716	49	0,075	52	0,576	25
SBVT - Aero	0,744	20	0,739	19	1	1	0,15	26	0,662	20

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EXPORT PERFORMANCE: ORGANIZATIONAL LEARNING, KNOWLEDGE MANAGEMENT AND AMBIDEXTERITY RELEVANCE FOR IT FIRMS IN BRAZIL

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ABSTRACT
This study aimed to analyze organizational learning and knowledge management and its relationship with ambidexterity as antecedents from export performance of Information Technology companies in the metropolitan area of Belo Horizonte. For a better alignment from constructs, they were divided into five groups: Organizational Learning, Knowledge Management, Exploration, Exploitation and Export Performance. From this division, the relations were made with export performance, which is the dependent variable of the proposed model. Based on the sample of 109 professionals in technology area, a descriptive and quantitative study was carried out. The data collection was done through a questionnaire answered by the managers and IT professionals from the companies. For data analysis, the descriptive statistics and the modeling technique of structural equations were applied. The results showed that the organizational learning has a positive correlation with the knowledge management in the companies, according to the perception of the managers and professionals of the area, confirming one of the hypothesis of research. The research also showed that organizational learning has a positive influence on the exploitation and exploitation capacity in companies. Additionally, mediated by exploitation capacity, Organizational Learning and Knowledge Management did not show a significant and positive trend in export performance, although managers and professionals in the area recognized their importance.

Keywords: Organizational Learning; Exploration; Exploitation; Knowledge Management and Export Performance;

1 Introducation

Knowledge management in information technology (IT) services has become increasingly important in the face of the challenges of an increasingly globalized market. It is changing many business policies, it is the lever on which it is based, to lead the organization to a sustainable and balanced development. In order to have knowledge, it is necessary to use procedures that provide this change through organizational learning. Organizational learning can be understood as the process internalization of the new organizational competences generated by the knowledge management. Their relationship with knowledge management also lies in the fact that organizational learning requires that companies have the ability to manage information through information processing, storage and retrieval methods. In this context, exportation process is directly associated with knowledge management and organizational learning outcomes.

According to Bhatt et al. (2004), the key goal of KM is to achieve a balance between knowledge exploitation and knowledge exploration. Exploitation of existing knowledge is useful given a stable environment. Due to environmental changes, the adequacy of the firm's knowledge base can be reduced and, therefore, the ability to use knowledge effectively becomes essential for companies. In such conditions, firms require the ability to create new knowledge to effectively sustain their competitive advantage (i.e.knowledge exploration). The KM process should contain both the knowledge exploitation and knowledge exploration to create sources of sustainable growth and to pursue KM best.

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From the perspective of organizational learning, exploitation captures activities such as efficiency, production, selection, and execution (March, 1991). Firms innovate by engaging in two forms of learning: exploitative (refinement of existing knowledge) and exploratory (development of new knowledge) (March, 1991). The ambidexterity literature argues that firms need to exploit simultaneously existing skills in order to gain efficiency but also provide new-to-the-world products to withstand competitors' imitation and achieve sustainable advantages (Lisboa et al, 2011).

R&D and export are both exploration activities, but the question remains, whether the ambidexterity is inter (between exploration and exploitation) and/or intracategorization issue (e.g. within exploration) (March, 1991)? Especially since intra ambidexterity seems to follow the same tendencies for solutions as inter ambidexterity (Gibson and Birkinshaw, 2004). R&D and export are interconnected by providing input and feedback to each other, and may suffer the same way ambidexterity issues (Rungi and Ida, 2015).

On this scenario, the following question arises "What is the relation between knowledge management and organizational learning on Exploration and Exploitation, and how they influence on IT exportation performance?".

2 Literature Review

Duncan (1976) suggested that to accommodate the conflicting alignments required for innovation and efficiency firms needed to shift their structures over time to align the structure with the firm's strategy. In this view, organizations achieved ambidexterity in a sequential fashion by shifting structures over time. Innovation has become widely recognized as a key to competitive success (Francis and Bessant, 2005). Firms with a technological and R&D based advantage can expand into overseas markets at little or no marginal cost of developing these advantages at home (Hortinha et al., 2011). Garvin (1993) defined a learning organization as "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights".

As described and shown by Gedajlovic et al. (2012) (Figure 1), some firms have a predominant exploratory focus (Quadrant III) and actively seek radical change and opportunities in new technologies, products, or markets. Exploration oriented firms actively collect new knowledge and expand aggressively through product development strategies. Other firms have a predominant exploitative orientation (Quadrant II). These firms possess highly refined routines that leverage clearly identified core strengths and focus on efficiency driven rents.

A third strategic orientation utilized by some firms is a dual one emphasizing both exploration and exploitation type opportunities (Quadrant I). Some firms, however, never develop a clear strategic orientation with respect to either exploration or exploitation type opportunities (Quadrant IV).

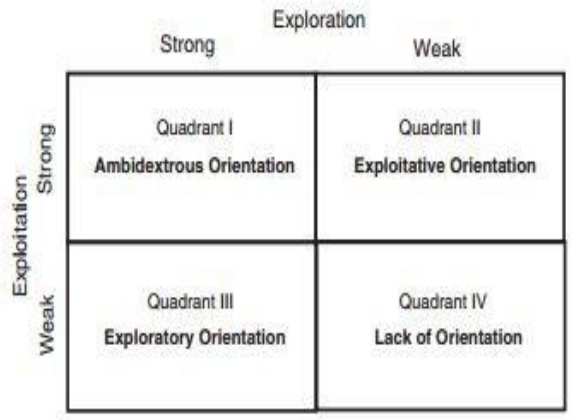

Figure 1 – Firm's strategic orientation

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Source: Gedajlovic et al. (2012)

Both exploration and exploitation are essential for organizations, but they compete for scarce resources. As a result, organizations make implicit and explicit choice between the two. Explicit choices are found in calculated decisions about alternative investments and competitive strategies. Understanding the choices and improving the balance between exploration and exploitation are complicated by the fact that returns from the two options vary not only with respect to their expected values, but also with respect to their variability, their timing, and their distribution within and beyond the organization (March, 1991). The Figure 2 shows the proposed Structural Model where KM and OL has a correlation between them two. They are related with Exploration and Exploitation capability, and consequently all of them are related to Export Performance, that is the dependent construct.

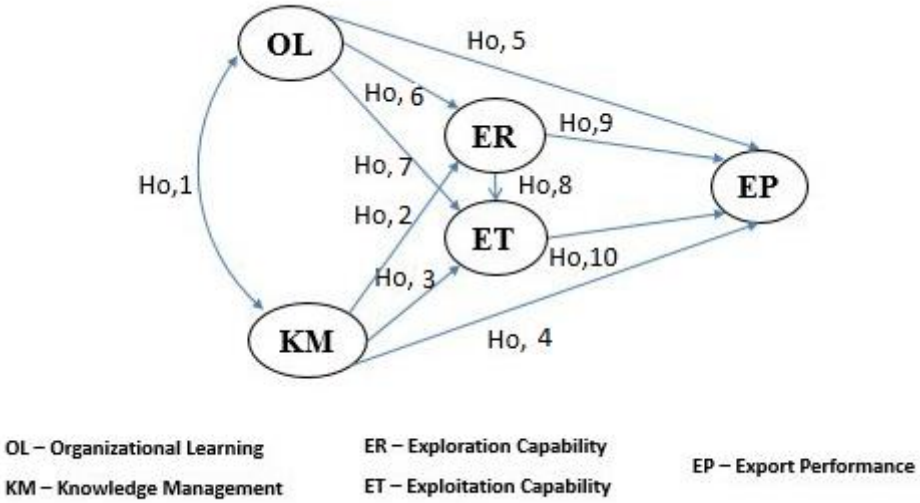

Figure 2– Conceptual model
Source: Made by author

The hypothesis presented in this research are intended to identify the KM and
Ambidexterity relations on Export performance and Organizational Learning. In this sense, hypothesis is a supposed answer to the problem that will be investigated. The origin hypothesis could be in the unsystematic observation of the facts, in the results of other research, in existing theories or in simple intuition (GIL, 1999).

2.1 Knowledge Management

Knowledge is the central element in the learning process, which consists of the acquisition, integration and exploitation of knowledge (Cohen and Levinthal, 1990). Knowledge management is essentially the creation and application of knowledge as a resource (Grant, 1996), whilst learning is a process of acquisition, assimilation, and exploitation of this knowledge (Cohen and Levinthal, 1990).

- Ho1 - Organizational Learning is positively correlated with Knowledge Management.
- Ho2 - There is a positive effect of Knowledge Management on Exploration Capability.
- Ho3 - There is a positive effect of Knowledge Management on Exploitation Capability. · Ho4 - There is a positive effect of Knowledge Management on Export Performance.

2.2 Organizational Learning

Organizational learning (OL) and knowledge management (KM) research has gone through dramatic changes in the last twenty years and, without doubt, the field will continue to change in the next ten years. Our research suggests that Cyert and March were the first authors to reference organizational learning in their publication of 1963 (Lyles, 2011c). Organizational learning represents the development of knowledge that influences behavioral changes and leads to enhanced performance (Crossan and White, 1999; Fiol and Lyles, 1985).

Some believe organizational learning and knowledge management can be both cause and effect; while some others regard either of the variables being the cause of the other (Liao S, 2009). Additional insight into how organizations can create and improve workplace environments, as well as recognition of the potential impacts of such environments on employees, is crucial for practice, research, and theory building (Kontoghiorghes, 2001).

- Ho5 - There is a positive effect of Organizational Learning on Export Performance.
- Ho6 - There is a positive effect of Organizational Learning on Exploration Capability.
- Ho7 - There is a positive effect of Organizational Learning on Exploitation Capability.

2.3 Ambidexterity

It is possible to identify a great amount of available data on a huge range of diverse areas where Ambidexterity (Exploration and Exploitation) is being seeking on high-tech and software companies around the world. Some areas like marketing, projects, strategy, finances, business and knowledge management, and many others.

From 1999 to nowadays the studies on Organizational Ambidexterity are growing year by year in different areas of study.

2.3.6 Exploration and Exploitation

As mentioned by Bastiani and Gutierrez (2016), in 1991, Professor James March published another article with great impact on the academic community, retaking Duncan's problematic and framing it from the point of view of Organizational learning. By coding the concepts of exploration and exploitation, March typified them as intrinsically different activities and equally fundamental to the success of organizations making aware of the potential for destruction of value if an organization chooses to follow only one of two paths.

As Dupouet (2013) says, exploration, in essence, produces new knowledge from which organizations will be able to launch new activities remote from the skills currently mastered by the organization. Explorative knowledge can thus in essence potentially change the structure and strategic positioning of the firm. Exploration entails the ability to fetch knowledge of great diversity, both within and outside the firm. Exploration also requires that the firm has the ability to compare, and eventually combine these different pieces of knowledge in order to produce newness.

In general, ambidexterity in an innovative organization refers to its ability to develop structures and processes, which allows them to carry our both "exploitation"and "exploration"activities sequentially or simultaneously – either at an individual or at an organizational level (Raisch, 2009).

The shift to an exploitative orientation leads to a performance improvement by process innovation. This shift between periods of exploration and periods of exploitation

signifies a possible way to avoid competency traps (too much exploitation) and failure traps (too much exploration) (Siggelkow and Levinthal, 2003). Exploitative innovation builds and replicates the firm's prior knowledge to leverage existing products through technology efficiency's and cost control (Levinthal and March, 1993).

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- H8 - There is a positive effect of the Exploration Capability on the Exploitation
- Capability.
- H9 - There is a positive effect of the Exploration Capability on the Export Performance.
- H10 - There is a positive effect of the Exploitation Capability on the Export Performance.

2.4 Export Capability

Export performance is defined as the extent to which the export venture contributes to the firms' strategic and financial objectives. We view export performance at the strategic level, i.e., the contribution of the export venture to the firm's overall competitiveness, strategic position, and global market share (Zou and Osland, 1998).

Looking at export performance, literature reveals that this concept's measurement is one the most controversial aspects in international business primarily because of its multi-dimensional nature. However, Sapienza et al. (1988) argue that subjective performance measures (such as those designed to enlist the opinion or attitude of the respondent) such as "Compared to our competitors, our exports have rapidly penetrated into various foreign markets" are more useful when studying new companies, as they may often be uncomfortable about providing objective performance measures such as absolute export sales volume.

3 Theoretical Model

In this section, it is described the methodological procedures those were used in this the following parts: characterization, procedures, instrument data collection and analysis plan adopted to achieve the objectives of this study.

"To provide the means by which current best evidence from research can be integrated with practical experience and human values in the decision-making process regarding the development and maintenance of software" (Dyba et al. 2005).

3.1 Research design

This research is classified as survey. It also applies to qualitative / interview studies. A quantitative method was applied and data was collected from some selected IT companies. The data collection was made through publicly available sources. This research, regarding its purpose, can be classified as explanatory, as it investigates the managers' / employees' perception regarding KM / OL / Ambidexterity and how they contribute to the export performance of IT companies.

A questionnaire was sent to employees / managers from these IT companies to obtain the response about the KM / OL situation and export performance. A questionnaire (survey) has been done and conducted behalf a set of closed questions. The people responded through online survey by Survey Monkey. This research, regarding its purpose, can be classified as explanatory, as it intends to identify, to confront and to describe KM / OL / Ambidexterity and how they contribute to the export performance of IT companies.

3.2 Study sample

The research sample has been drawn for IT companies located at metropolitan area of Belo Horizonte (Brazil). The aspired profile of firms to participate in the research is IT companies with any size and no minimum employees with Exportation as one of the major field of expertise. They should have to be international or currently exporting. After online research / email and an approach via phone, the suitable firms were identified.

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It should be noted that the data collection instrument was Survey Monkey, which facilitated the handling of the respondent. Subsequently, contact was done through Survey Monkey collectors, which sent the link by e-mail / Linkedin to access survey. Beyond this, some contacts were made with some people who are working on IT export companies to share the survey internally. We could get respondents from around 15 different companies.

3.3 Data Collection

The survey was conducted from November to December 2017. Data collection was done by online questionnaire consisting of structured questions, to obtain on the profile of the interviewees and to fulfill the objectives stipulated in this research. First, was checked if firms has exported in the previous year and after if their exports operations were regular (eligibility for participating in the study). Most of the companies are exporting services like IT support / process, Project Management, Software development and Business Analysis. Then, it was established contact with the manager and employees from the companies. Then, an e-mail invitation has been sent to prospective subjects to explain the academic purpose of this dissertation, to ensure confidentiality of the responses, and to send the respective link to the survey. An e-mail reminder was sent one week later to non respondents and a final reminder 5 days after that.

The questionnaire was separated into six parts. The first one were prepared to obtain information about the respondent and the company and to identify OL artifacts and issues associated with employee's knowledge and learning; the second one, to attribute the degree's importance of these artifacts according to the employees / managers 'view; the third one, to ascertain the employee's / manager's perception regarding the product innovation, R&D, Business development and new tech- nologies exploration; the fourth one has explored items like R&D on export activities, new products on new markets, customer needs and process automation; the fifth one (last) is only aimed to evaluate the intensity of Export performance and Firm internationalization.

3.4 Statistical Treatment and Data Analysis

In order to evaluate the relationships between the constructs, the structural equations model was used using the PLS approach. The PLS (Partial Least Square) approach (Vinzi (2010)) was developed as an alternative to the traditional approach based on the co-variance matrix (CBSEM), being a technique that offers greater flexibility in data modeling since it does not it is necessary to satisfy some harder assumptions such as multivariate normality of the data, independence between observations and high sample size.

In the descriptive analysis of the characterization variables of the sample, the absolute and relative frequencies were used. In the description of the items of the constructs, position, central tendency and dispersion measures were used, one of the measures being used the bootstrap percentage interval with 95% confidence.

The process of modeling structural equations is divided into two parts: Model of Measurement and Structural Model. In order to verify the validity of the measurement model, that is, the ability of the set of indicators of each construct to accurately represent its respective concept, dimensional, reliability and convergent validity were evaluated.

In the evaluation of the convergent validity, the criterion of the Average Extracted Variance (AVE) proposed by Fornell and Larcker (1981) which represents the average percentage of shared variance between the latent construct and its items. This criterion guarantees convergent validity for AVE values above 50% Henseler, Ringle, and Sinkovics (2009) or 40% in the case of exploratory research (Nunnaly, 1994).

Cronbach's alpha (A.C.) and Compound Reliability (C.C.) indicators (Chin (1998)) were used to verify reliability. According to Tenenhaus, Amato, and Esposito Vinzi (2004), the indicators A.C. and C.C. should present values above 07˙ 0 for an indication of construct reliability, or values above 06˙ 0 in the

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case of exploratory research (Hair et al. 2009).

For discriminant validity the criteria of Fornell and Larcker (1981) were used which guarantees discriminant validity when the extracted variance (AVE) of a construct is greater than the shared variance of this construct with the others. The cross-factor loading method (Barclay, 1995) was also used to verify discriminant validation. By the criterion of crossed factorial loads, the discriminant validity is reached when the factorial load of the item is higher than all its crossed factorial loads. To check the dimensionality of the constructs was used the criterion of Kaiser (1958) that returns the amount of dimensions of the construct.

The bootstrap method (Efron and Tibshirani, 1993) is widely used in making inferences when the probability distribution of the variable of interest is unknown. It should be noted that the items were recoded for the likert scale of agreement ranging from -1 (Totally Disagree) to 1 (Totally Agree). In the evaluation of the quality of fit of the model, R2 and GoF were used (Tenenhaus et al. (2004)). R2 represents on a scale of 0% to 100% how much the independent constructs explain the dependents, and, in general, values less than 25% represent weak explanatory capacity, values between 25% and 50% indicate moderate explanatory capacity and values above 50% show substantial explanatory capacity (Hair Jr, Hult, Ringle, and Sarstedt, 2014).

The GoF is a geometric mean of the AVEs of the constructs and R2 of the model and also varies from 0% to 100%. The GoF in PLS can not discriminate valid and invalid models, nor does it apply to models with formative constructs (Henseler and Sarstedt, 2012), it only allows a synthesis of AVEs and R2 of the model in a single statistic, and may be useful for future comparisons of adhesion of different samples to the model.

The software used in the analyzes was R (version 3.3.2).

3.5 Measurement Model

In the analysis of the measurement model the convergent validity, the discriminant validity and the reliability of the constructs are verified. Convergent validity ensures that the indicators of a construct are correlated enough to measure the latent concept.

The discriminant validity verifies if the constructs measure different aspects of the phenomenon of interest effectively. Reliability reveals the consistency of measurements that they intend to measure.

In order to test the convergent validity of the constructs, the criterion proposed by Fornell and Larcker (1981). In order to measure the reliability of the constructs, the Cronbach's alpha (A.C.) and Compound reliability (C.C.) indicators were used again. For discriminant validity we used the criterion of Fornell and Larcker (1981), which guarantees the discriminant validity when the extracted variance (AVE) of a construct is greater than the shared variance of this construct with the others. The cross-factor loading method (Barclay, 1995) was also used to verify discriminant validation. By the criterion of crossed factorial loads, the discriminant validity is reached when the factorial load of the item is higher than all its crossed factorial loads.

In addition, Kaiser's criterion was used to verify the dimensionality of the constructs. According to Hair et al. (2009), items with factor loads less than 0.50 should be eliminated, since they do not contribute significantly to the formation of the latent variable, impairing the scope of the basic assumptions for the validity and quality of the indicators created to represent the concept of interest.

In addition, the Bootstrap method was used to calculate the confidence intervals for the weights of the measurement model and the coefficients of the structural model, providing information about the variability of the estimated parameters, thus providing an important validation of the results. The bootstrap method (Efron and Tibshirani, 1993) is widely used in making inferences when the probability distribution of the variable of interest is unknown.

3.6 Structural Model

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In accordance with Hair et al. (2009) to SEM (Structural Equations Modeling) is a continuation of some multivariate analysis techniques, mainly the multiple regression analysis and factorial analysis.
What differs from the other multivariate techniques is that the SEM allows to examine several dependency relations at the same time, while the other techniques are able to verify and examine a single relationship between the variables at a time.
The measurement model and regression model were performed using the PLS (Partial Least Square) method. Structural Equation (SEM) models are very popular in many disciplines, with the PLS approach being an alternative to the traditional approach based on covariance.
The PLS approach has been referred to as a smooth modeling technique with minimal demand when considering measurement scales, sample size and residual distributions (Monecke and Leisch, 2012).
To verify the quality of the adjustments, R2 and GoF were used (Tenenhaus et al. (2004)). R2 represents on a scale of 0% to 100% how much the independent constructs explain the dependents, and, in general, values less than 25% represent weak explanatory capacity, values between 25% and 50% indicate moderate explanatory capacity and values above 50% show substantial explanatory capacity (Hair Jr et al., 2014).
The GoF is a geometric average of the AVEs of the constructs and R2 of the model and also varies from 0% to 100%. The GoF in PLS does not have the ability to discriminate valid and invalid models, nor it applies itself models with formative constructs (Henseler and Sarstedt, 2012), it only allows a synthesis of the AVEs and R2 of the model in a single statistic to be useful for future comparisons of adherence of different samples to the model.

4 Empirical Section

The database consisted of 37 variables, 3 of which characterization variables and 34 variables related to 5 constructs (Organizational Learning, Knowledge Management, Exploration Capacity, Exploitation Capacity and Export Performance). The survey was performed with 109 individuals and no missing data were observed. The Figure 3 illustrates the results presented in Table 1.

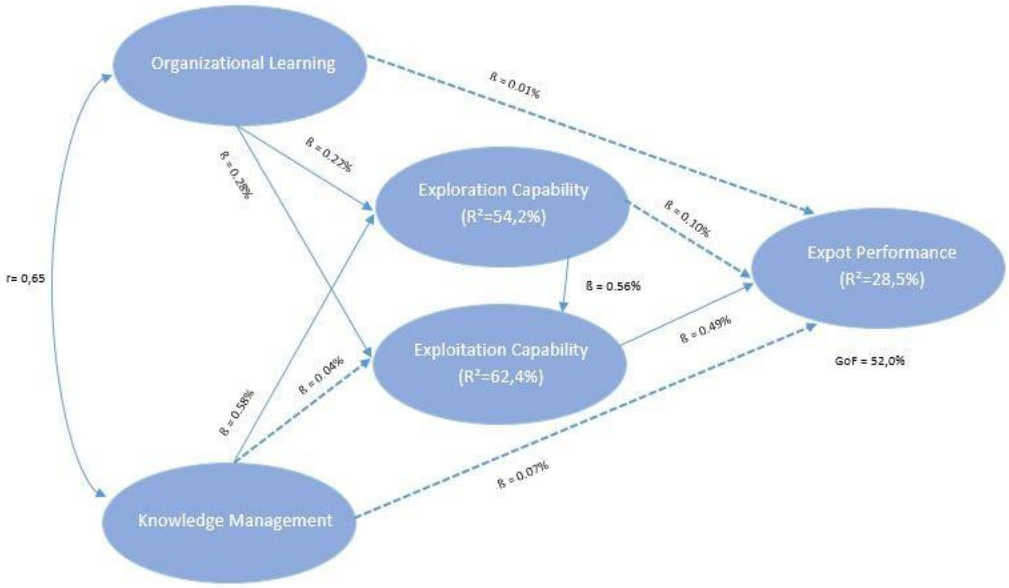

Figure 3 – Structural Model
Source: Made by Author

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Endogenous	Exogenous	β	E.P.(β)	I.C.-95%	Valor-p	R^2
Exploration Capability	Organizational Learning	0,22	0,09	[0,06; 0,40]	0,014	54,2%
	Knowledge Management	0,58	0,09	[0,40; 0,74]	0,000	
Exploitation Capability	Organizational Learning	0,28	0,08	[0,12; 0,46]	0,001	62,4%
	Knowledge Management	0,04	0,09	[-0,17; 0,22]	0,670	
	Exploration Capability	0,56	0,09	[0,40; 0,72]	0,000	
Export Performance	Organizational Learning	0,01	0,12	[-0,25; 0,26]	0,933	28,5%
	Knowledge Management	-0,07	0,13	[-0,35; 0,19]	0,590	
	Exploration Capability	0,10	0,14	[-0,16; 0,38]	0,490	
	Exploitation Capability	0,49	0,14	[0,26; 0,75]	0,000	

[1] Standard Error; [2] Bootstrap Interval; GoF = 52,0%.

Table 1 – Structural Model
Source: Made by Author

It should also be noted that the model presented a GoF of 52.0% (Figure 3) and, in addition, the bootstrap confidence intervals were in agreement with the results found via p-value, thus evidencing a greater validity of the presented results.

On the present research, no value was found outside the range of the their respective variable, thus not evidencing the type of outlier related to error in the tabulation of the data.

In addition, we sought to verify the existence of outliers univariate, which consists in the verification of some divergent response based on each of the variables of the model, and of multivariate, that present a pattern of different answer considering all the variables at the same time.

4.3 Construct Variables Description

The analysis was intended to identify, confront and describe KM / OL / Ambidexterity and how they contribute to the export performance on IT companies was performed using 37 variables related to the constrcuts should respond at the levels from 1 to 7 of Likert's scale. Remember that the items were recoded to -1 (I Totally Disagree) to 1 (Totally Agree). The Tables 2 presents the variables and Table 3presents a descriptive analysis of the variables of the constructs. Therefore, it should be noted that:

- On the Organizational Learning construct individuals tended to agree on all items.
- There was no significant difference between the items, since the confidence intervals overlap.
- On the Knowledge Management construct individuals tended to agree with items "Our organization maintains ways to create new knowledge" (KM2), "Our organization retains in an accessible manner the important knowledge identified" (KM3), "Our organization facilitates the sharing of knowledge internally" (KM5) and "Our organization selectively applies knowledge with broadness in the necessary areas" (KM7) and did not show a tendency of agreement in the other items. There was no significant difference between the items, since the confidence intervals overlap.
- On the Exploration Capacity construct, the individuals did not show a tendency of agreement in item "In our company the R&D challenges are understood by the different areas" (ER2) and tended to agree with the other items. There was no significant difference between the items, since the confidence intervals overlap.

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Constructs	Items	Item Description
Organizational Learning	OL1	Our employees are regularly trained to carry out the work.
	OL2	In our organization tacit knowledge evolves through communication between people and teams.
	OL3	Our employees demonstrate understanding of the standards to coordinate and carry out the work.
	OL4	Our employees demonstrate competences to interpret and correct the effects of their work.
	OL5	Context changes influence the knowledge our employees use at work.
	OL6	Changes in the level of skills of our employees are evaluated.
	OL7	Our organization often introduces innovations that improve performance in business areas.
Knowledge Management	KM1	Our organization periodically identifies the main knowledge it holds.
	KM2	Our organization maintains ways to create new knowledge.
	KM3	Our organization retains in an accessible way the important knowledge identified.
	KM4	Our organization maintains structured activities to capture knowledge from other external sources.
	KM5	Our organization facilitates knowledge sharing internally.
	KM6	Our organization provides formally lessons learned from the actions it performs.
	KM7	Our organization selectively applies the knowledge to the necessary areas.
Exploration Capability	ER1	Our company is recognized as an incentive for the innovation of its products.
	ER2	In our company the R & D challenges are understood by the different areas.
	ER3	R & D personnel support the Business Development process.
	ER4	Our company seeks out new technological ideas thinking "out of the box".
	ER5	Our company seeks creative ways to meet the needs of our customers.
	ER6	Our company seeks to create products or services that are innovative to customers.
	ER7	Our company bases our success on its ability to exploit new technologies.
Exploitation Capability	ET1	In our company the relevance of Research and Development in its export activities is low.
	ET2	In our company the forms of action proposed by the Business Development staff are accepted by the Research and Development staff.
	ET3	To what extent our company enters with current products well accepted in new markets.
	ET4	In our company we constantly monitor the satisfaction of existing customers.
	ET5	In our company we increase the level of automation in our operations.
	ET6	At our company we continually improve the reliability of our products and services.
	ET7	In our company the area of guarantee and customer service is structured for export.
Exportation Performance	EP1	In our company, export performance is regularly evaluated.
	EP2	In our company we had to change the business model to meet international customers (export).
	EP3	Export performance indicates the knowledge acquired throughout the organization structure.
	EP4	The way the information is used in our company is significantly and positively related to export performance measures.
	EP5	In our company the activities of Research and Development is important for export activities.
	EP6	In our company one of the first steps towards internationalization is export.

Table 2 – Variables Research Relations
Source: Made by Author

Constructs	Items	Average	D.P.	I.C.-95%
Organizational Learning	AO1	0,39	0,48	[0,30; 0,47]
	AO2	0,42	0,41	[0,34; 0,50]
	AO3	0,33	0,45	[0,23; 0,41]
	AO4	0,35	0,43	[0,27; 0,43]
	AO5	0,48	0,40	[0,40; 0,55]
	AO6	0,20	0,56	[0,10; 0,31]
	AO7	0,18	0,60	[0,07; 0,29]
Knowledge Management	GC1	0,00	0,55	[-0,11; 0,10]
	GC2	0,15	0,53	[0,06; 0,25]
	GC3	0,11	0,56	[0,00; 0,21]
	GC4	-0,01	0,57	[-0,10; 0,10]
	GC5	0,26	0,58	[0,15; 0,37]
	GC6	-0,07	0,66	[-0,20; 0,04]
	GC7	0,10	0,53	[0,00; 0,19]
Exploration Capability	CR1	0,21	0,58	[0,10; 0,32]
	CR2	-0,03	0,53	[-0,12; 0,07]
	CR3	0,03	0,52	[-0,06; 0,14]
	CR4	0,18	0,60	[0,07; 0,29]
	CR5	0,29	0,52	[0,19; 0,39]
	CR6	0,33	0,57	[0,23; 0,44]
	CR7	0,20	0,56	[0,10; 0,29]
Exploitation Capability	CT1	0,12	0,57	[0,00; 0,22]
	CT2	0,06	0,46	[-0,02; 0,15]
	CT3	0,23	0,47	[0,14; 0,32]
	CT4	0,42	0,57	[0,32; 0,53]
	CT5	0,35	0,50	[0,24; 0,44]
	CT6	0,41	0,41	[0,33; 0,48]
	CT7	-0,09	0,52	[-0,18; 0,01]
Export Performance	EP1	-0,05	0,48	[-0,14; 0,04]
	EP2	-0,07	0,51	[-0,17; 0,02]
	EP3	0,08	0,50	[-0,02; 0,17]
	EP4	-0,12	0,47	[-0,20; -0,03]
	EP5	0,05	0,48	[-0,04; 0,14]
	EP6	-0,09	0,52	[-0,18; 0,01]

[1] Bootstrap Interval

Table 3– Descriptive analysis of the construct variables
Source: Made by Author

- On the construct Exploitation Capacity the individuals did not show a tendency of agreement in item "In our company the area of guarantee and services to the client is structured for the export" (ET7) and tended to agree with the other items. There was no significant difference between the items, since the confidence intervals overlap.
- On the Export Performance construct, individuals tended to disagree with item "The way information is used in our company is related to export performance measures" (EP4) and did not present a tendency of agreement in the other items.

There was no significant difference between the items, since the confidence intervals overlap.

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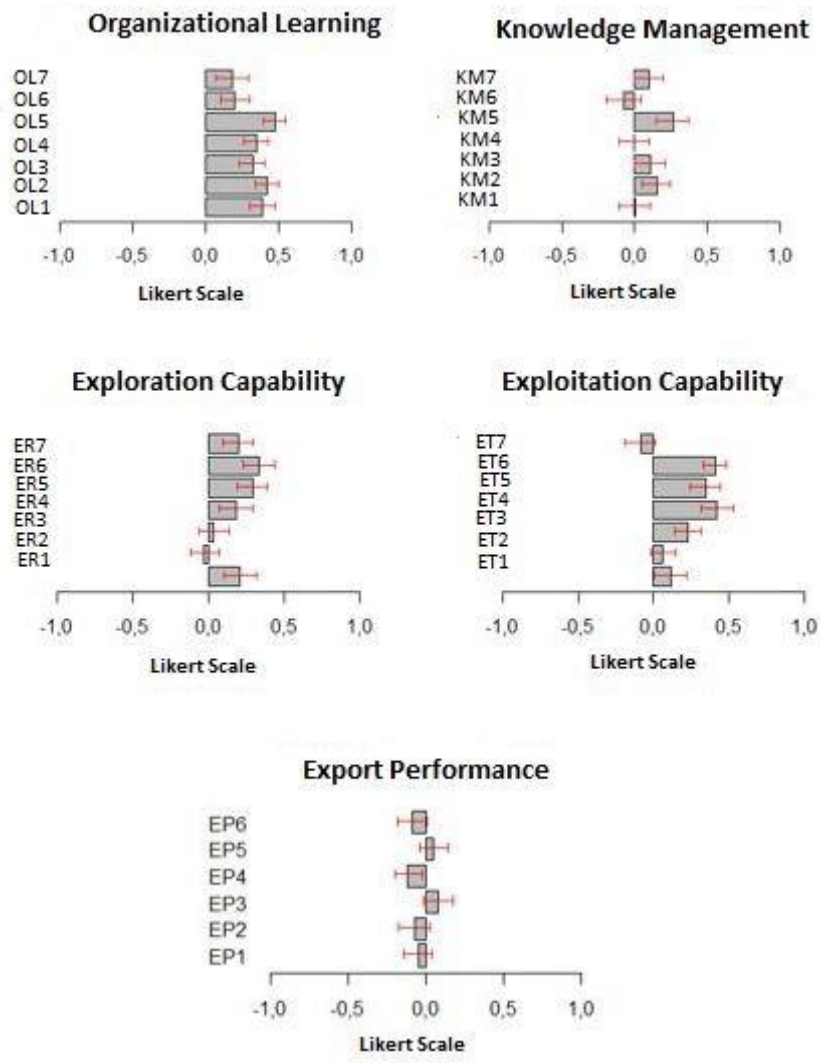

Figure 4– Confidence intervals to the construct items
Source: Made by Author

4.4 Measurement Model Analysis

Table 4 shows the weights, factor loads and commonalities of the measurement model. In this way, it can be emphasized that:

- The item "Context changes influence the knowledge that our employees use at work" (OL5) of the Organizational Learning construct presented a load lower than 0.50 and was removed from the analysis.
- Item "In our company the relevance of Research and Development in export activities is low" (ET1) of the Construct Capacity construct presented a factorial load less than 0.50 and was removed from the analysis.
- In the final model, all items had factorial loads above 0.50

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Constructs	Items	Initial model				Final model			
		weight(α)	I.C.-95%[1]	C.F.[2]	Com.[3]	weight(α)	I.C.-95%[1]	C.F.[2]	Com.[3]
Organizational Learning	OL1	0,28	[0,20; 0,36]	0,75	0,57	0,29	[0,22; 0,36]	0,76	0,58
	OL2	0,18	[0,08; 0,27]	0,54	0,29	0,18	[0,08; 0,28]	0,55	0,31
	OL3	0,22	[0,13; 0,27]	0,74	0,54	0,22	[0,15; 0,29]	0,74	0,55
	OL4	0,19	[0,08; 0,28]	0,60	0,36	0,20	[0,09; 0,29]	0,58	0,34
	OL5	0,12	[0,00; 0,23]	0,32	0,10	-	-	-	-
	OL6	0,26	[0,17; 0,32]	0,70	0,49	0,26	[0,19; 0,34]	0,71	0,50
	OL7	0,27	[0,19; 0,36]	0,76	0,58	0,27	[0,19; 0,35]	0,77	0,59
Knowledge Management	KM1	0,15	[0,08; 0,19]	0,69	0,48	0,15	[0,08; 0,19]	0,70	0,48
	KM2	0,20	[0,17; 0,24]	0,85	0,73	0,20	[0,17; 0,24]	0,85	0,73
	KM3	0,19	[0,16; 0,23]	0,82	0,67	0,19	[0,16; 0,24]	0,82	0,67
	KM4	0,19	[0,15; 0,23]	0,77	0,60	0,19	[0,15; 0,23]	0,77	0,60
	KM5	0,18	[0,14; 0,23]	0,80	0,65	0,18	[0,14; 0,23]	0,81	0,65
	KM6	0,20	[0,16; 0,25]	0,78	0,60	0,20	[0,16; 0,25]	0,78	0,60
	KM7	0,17	[0,12; 0,21]	0,75	0,56	0,17	[0,11; 0,20]	0,75	0,56
Exploration Capability	ER1	0,19	[0,16; 0,22]	0,84	0,71	0,19	[0,16; 0,22]	0,84	0,71
	ER2	0,16	[0,14; 0,19]	0,77	0,59	0,16	[0,13; 0,19]	0,77	0,59
	ER3	0,17	[0,14; 0,20]	0,68	0,47	0,17	[0,14; 0,20]	0,68	0,47
	ER4	0,17	[0,15; 0,19]	0,81	0,66	0,17	[0,15; 0,19]	0,81	0,66
	ER5	0,19	[0,16; 0,21]	0,86	0,74	0,19	[0,16; 0,22]	0,86	0,74
	ER6	0,20	[0,18; 0,23]	0,86	0,75	0,20	[0,18; 0,23]	0,86	0,75
	ER7	0,17	[0,14; 0,20]	0,78	0,61	0,17	[0,14; 0,20]	0,78	0,62
Exploitation Capability	ET1	-0,04	[-0,15; 0,07]	-0,09	0,01	-	-	-	-
	ET2	0,23	[0,17; 0,28]	0,65	0,43	0,23	[0,17; 0,29]	0,66	0,43
	ET3	0,20	[0,12; 0,26]	0,65	0,42	0,20	[0,12; 0,26]	0,65	0,43
	ET4	0,23	[0,18; 0,29]	0,67	0,45	0,24	[0,18; 0,29]	0,67	0,45
	ET5	0,27	[0,22; 0,32]	0,75	0,56	0,27	[0,22; 0,32]	0,76	0,57
	ET6	0,28	[0,23; 0,35]	0,76	0,57	0,29	[0,23; 0,35]	0,75	0,57
	ET7	0,22	[0,17; 0,29]	0,68	0,46	0,22	[0,17; 0,28]	0,67	0,45
Export Performance	EP1	0,32	[0,22; 0,47]	0,78	0,60	0,32	[0,22; 0,48]	0,78	0,61
	EP2	0,20	[0,10; 0,28]	0,74	0,55	0,20	[0,09; 0,29]	0,74	0,55
	EP3	0,16	[0,01; 0,28]	0,71	0,50	0,16	[0,01; 0,28]	0,71	0,50
	EP4	0,20	[0,09; 0,30]	0,69	0,48	0,20	[0,09; 0,29]	0,69	0,47
	EP5	0,22	[0,12; 0,30]	0,80	0,64	0,23	[0,12; 0,31]	0,80	0,65
	EP6	0,23	[0,14; 0,32]	0,74	0,55	0,23	[0,13; 0,32]	0,74	0,55

[1] bootstrap Interval; [2] Factorial load; [3] Communality.

Source: Made by Author

Table 4– Measurement model

- In the final model, through the confidence intervals (CI - 95%) it can be concluded that all weights were significant, thus evidencing the importance of all items for the formation of indicators that represent the constructs.

Tables 5 and 6 presents the result of the analyses of the convergent validity, discriminant validity, reliability and dimensionality of the constructs of the measurement model. Therefore, it is concluded that:

Constructs	Items	A.C.	C.C.	Dim.	AVE	VCM
Organizational Learning	6	0,78	0,85	1	0,48	0,42
Knowledge Management	7	0,89	0,92	1	0,61	0,52
Exploration Capability	7	0,91	0,93	1	0,65	0,57
Exploitation Capability	6	0,79	0,85	1	0,48	0,57
Export Performance	6	0,84	0,88	1	0,56	0,28

[1] Cronbach's alpha, [2] Compound Reliability, [3] Dimensionality, [4] Average Extracted Variance; [5] Maximum Shared Variance.

Table 5 – Measurement model validation

Source: Made by Author

- All constructs reached the required levels of reliability, since the reliability indexes
- A.C. and C.C. were higher than 0.70.
- By the Kaiser criterion, all constructs were one-dimensional.
- AVE values were higher than 0.40 in all constructs, thus showing the convergent validation of the same.

According to the criteria of Fornell and Larcker (1981), there was no discriminant validation in the Exploitation Capacity construct, since the maximum shared variance was greater than its respective AVE. However, by the cross-factor loading method (Barclay, 1995) there was discriminant validation in all constructs, since the factorial loads of the items were higher than their respective maximum cross-factor loads.

4.5 Structural Model Analysis

Table 5 presents the results of the structural model. Thus, it can be concluded that:
Regarding to Exploration Capability:

- There was a significant (p-value = 0.014) and positive (ß= 0.22 [0.06; 0.40]) influence of Organizational Learning on Exploration Capability, so the greater the Organizational Learning, the greater it tends to be the Exploration Capacity.
- There was a significant (p-value = 0.000) and positive (ß= 0.58 [0.40; 0.74]) influence of Knowledge Management on Exploration Capability, thus, the greater the knowledge management, the greater the tendency be the Exploration Capacity.
- Organizational Learning and Knowledge Management were able to explain 54.2% of the variability of Exploration Capability.

Regarding to Exploitation Capability:

- There was a significant (p-value = 0.001) and positive (ß= 0.28 [0.12; 0.46]) influence of Organizational Learning on Exploitation Capacity, so the greater the Organizational Learning, the greater it tends to be the Exploitation Capacity.

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Constructs	Items	C.F.[1]	Máx(C.F.C.)[2]
Organizational Learning	OL1	0,74	0,52
	OL2	0,50	0,34
	OL3	0,77	0,40
	OL4	0,63	0,36
	OL6	0,70	0,53
	OL7	0,76	0,66
Knowledge Management	KM1	0,70	0,45
	KM2	0,84	0,64
	KM3	0,81	0,63
	KM4	0,76	0,60
	KM5	0,82	0,54
	KM6	0,80	0,59
	KM7	0,77	0,49
Exploration Capability	ER1	0,83	0,61
	ER2	0,80	0,57
	ER3	0,65	0,61
	ER4	0,80	0,58
	ER5	0,85	0,66
	ER6	0,86	0,67
	ER7	0,77	0,60
Exploitation Capability	ET2	0,67	0,52
	ET3	0,63	0,51
	ET4	0,63	0,50
	ET5	0,76	0,58
	ET6	0,73	0,61
	ET7	0,68	0,58
Export Performance	EP1	0,77	0,59
	EP2	0,73	0,31
	EP3	0,71	0,28
	EP4	0,73	0,31
	EP5	0,78	0,38
	EP6	0,75	0,39

[1] Factorial Load; [2] Cross Factorial Load.

Table 6 – Cross-factorial loadings - Measurement model
Source: Made by Author

- There was no significant influence (value-p = 0.670) of Knowledge Management on
- Exploitation Capacity.
- There was a significant (p-value = 0.000) and positive (ß= 0.56 [0.40, 0.72]) influence of the Exploration Capacity on the Exploitation Capacity, so the higher the Exploration Capacity to be the Exploitation Capacity.
- Organizational Learning, Knowledge Management and Exploration Capacity were able to explain 62.4% of the variability of Exploitation Capacity.

Regarding to Export Performance:

- There was no significant influence (p-value = 0.933) on Organizational Learning on
- Export Performance.
- There was no significant influence (value-p = 0.590) from the Export Performance
- Knowledge Management.
- There was no significant influence (p-value = 0.490) of the Exploration Capability on the Export Performance.
- There was a significant (p-value = 0.000) and positive (ß= 0.49 [0.26, 0.75]) influence of the Exploitation Capability on the Export Performance, so the higher the Exploitation Capability, the greater than the Performance of the Export.
- Organizational Learning, Knowledge Management, Exploration Capability and Exploitation Capability were able to account for 28.5% of the Export Performance variability.

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The results of the study indicate that Organizational Learning is positively correlated with Knowledge Management (r = 0,65). It was also verified that there is a positive effect of Organizational Learning on Exploration and Exploitation Capability (P-value = 0,014) and (ß= 0,22 [0,06; 0,40]); (P-value = 0,001) and (ß= 0,28 [0,12; 0,46]). Was also observed that there is a positive effect of Knowledge Management on Exploration Capability (Value-p = 0,000) and (ß= 0,58 [0,40; 0,74]). Another observation is that there is a positive effect of the Exploration Capability on the Exploitation Capability (P-value = 0,000) and (ß= 0,56 [0,40; 0,72]). Lastly, there is a positive effect of the Exploitation Capability on the Export Performance (P-value = 0,000) and (ß=0,49 [0,26; 0,75]). In this way, the above cited observations, confirms the research hypothesis, as presented in the Table 6.
In general, by only relating Exploitation capability and Export Performance, both are related, as demonstrated in Table 7. The other constructs did not present a significant trend and also has not a positive effect on the Export Performance.

Hypothesis	Hypothesis Description	Verification
H1	Organizational Learning is positively correlated with Knowledge Management.	Confirmed
H2	There is a positive effect of Organizational Learning on Export Performance.	Not Confirmed
H3	There is a positive effect of Knowledge Management on Export Performance.	Not Confirmed
H4	There is a positive effect of Organizational Learning on Exploration Capability.	Confirmed
H5	There is a positive effect of Organizational Learning on Exploitation Capability.	Confirmed
H6	There is a positive effect of Knowledge Management on Exploration Capability.	Confirmed
H7	There is a positive effect of Knowledge Management on Exploitation Capability.	Not Confirmed
H8	There is a positive effect of the Exploration Capability on the Exploitation Capability.	Confirmed
H9	There is a positive effect of the Exploration Capability on the Export Performance.	Not Confirmed
H10	There is a positive effect of the Exploitation Capability on the Export Performance.	Confirmed

Table 7 – Study Hypothesis Verification
Source: Made by Author

Analyzing the above considerations, it is not fully confirmed that most of constructs contribute to the Export Performance into IT companies.

5 Conclusion

This article had as general objective to analyze the impacts of the relationship of Organizational Learning and Knowledge Management with the export performance in the metropolitan region of Belo Horizonte in IT companies.

As specific objectives, we sought: Assess which ambidexterity forms and levels are further addressed in the literature as mechanisms for exploring and exploiting on IT organizations; To analyze how the exploration and exploitation process are most addressed on IT companies; To analyze what is the influence of KM and OL on Export Performance; Identify what is the connection between KM and OL. To achieve these objectives, a survey was conducted with 109 employees / managers from IT companies at Belo Horizonte.

The results showed that Organizational Learning is positively correlated with Knowledge Management; there is a positive effect of Organizational Learning in the Exploration Capability; There is a positive effect of Organizational Learning in the Exploitation Capability and also there is a positive effect of Knowledge Management on Exploration Capability. It was possible to confirm 60% of the suggested hypothesis. Few scenarios could not be confirmed as according employees / managers, there was no significant influence on Organizational Learning on Export Performance, there was no significant

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influence from the Export Performance on Knowledge Management, there was no significant influence of Exploration Capability on the Export Performance and also there was no significant influence of Knowledge Management on Exploitation Capacity.

The research raises important questions, since it has shown that the respondents tend to agree with the importance of Organizational Learning and recognize the influence of this in the Knowledge management within the activities of the company, but they disagree in some points, for example, as regards the questions concerning on Export Performance, with respect to the influence that this construct suffers from Organizational Learning and Knowledge Management. This shows that most of employees / managers use Knowledge Management in some way, but in the way they understand, as they may have little knowledge and clarity as to the terms used in KM / OL / Export Performance or companies are in the development cycle in which do not need to use them.

Was possible to identify that on the Organizational Learning construct, the employees / managers tended to agree in all items. Regarding the Knowledge Management construct they tended to agree with items KM2 ("Our organization maintains ways to create new knowledge"), KM3 ("Our organization retains in an accessible manner the important knowledge identified"),KM5 ("Our organization facilitates the sharing of knowledge internally") and KM7("Our organization selectively applies knowledge with broadness in the necessary areas "), showing that companies are worth creating, sharing and applying the knowledge internally. On the Exploration Capacity construct, the individuals did not show a tendency of agreement in item ER2 ("In our company the R&D challenges are understood by the different areas"), but agree with all the others.

This shows that respondents agree that companies are thinking "out of the box", incentives the products innovation, the R&D helps Development process and create innovative ways to meet customer expectations. Regarding Exploitation Capability the individuals did not show a tendency of agreement only with item ET7 ("In our company the area of guarantee and services to the client is structured for the export") and tended to agree with the other items. This shows that they only disagree that guarantee and customer service is not structured to export.

Regarding Export performance, it was only possible to confirm that Exploitation capability has a positive effect on Export Performance, showing that Export Performance is not directly influenced by Knowledge Management, Organizational Learning and Exploration Capability.
In this way, it can be seen that, at the end, the general research question and the general and specific objectives were answered as well as most of the hypothesis were tested and confirmed.

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HOW SO FEW: CHALLENGES FACED BY WOMEN RESEARCHERS FOR INTERNATIONALIZATION

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Abstract
According to Unesco report (2015), overall, women represent 53% of baccalaureate and master's students; this number falls in doctoral programs to 43% and the differences become even worse at the researcher level, where only 23% are women. The Unesco study also points out that women are underrepresented in the faculty of prestigious universities, as well as having more difficulty gaining access to research funding. There are few women who reach a prominent level in the international academic scene and there are still few researches that propose to reveal the causes of this scenario. All of these indicators precede the central question of our research: What are the main barriers, motivators and facilitators of the internationalization of full-time academic women researchers? In order to reach our goal, we interviewed full-time researchers working in higher education institutions in Brazil, chosen for experiencing the phenomenon of internationalization in their careers and thus being able to generate fundamental insights about the phenomenon (Sammarra and Biggiero, 2008; Creswell, 2013). As main results of the article we have that the conciliation of multiple roles and the resistance that the female researchers suffer, including of other feminine researchers, are among the main barriers for the internationalization of their careers. As the main motivators for internationalization are the expectation of professional growth, of benefits for third parties, such as students, institution in which it operates and society in general, and personal development. The main facilitators highlighted by the researchers are related to the institution in which they work, such as policies and structures that contribute to the development of their multiple roles, and the individuals that surround them, as career mentors with a view to internationalization. We bring in this article three main contributions. The first one refers to the subject, increasing the depth of the data through the reports of the interviewees and bringing, from the perspectives of Brazilian researchers, insights into the context of other countries. The second contribution is addressed to educational institutions, through the presentation of a scenario of current data that allow an understanding of the networks that prevent the best use of women in the academy and enabling them to deal with causes and problems. Finally, we bring a contribution to women researchers, so that they can act in a more conscious way in their field, and with clear access to the possible barriers faced, knowing also those factors that can facilitate their academic career in an international setting.

Keywords: Internationalization of Higher Education. International Education. Internationalization of Women Researchers. Women. Faculty.

1. INTRODUCTION

This article seeks to broaden the knowledge about the process of internationalization of women in Higher Education. The main motivation is to understand the vision of women who have achieved this achievement in terms of their main barriers, motivators and facilitators for internationalization. In initial studies, some figures released by Unesco (2015) have shown that the participation rates of women in higher education are decreasing according to the hierarchical growth of the university. From the data, of the 53% of the female representatives in the baccalaureate and master's degree, only 23% became researchers. Consequently, there is a low representation of these women in international research. There is also, according to Molina (2006), emancipation movements from women who are directing society towards the construction of models of greater collaboration and less domination. It is possible to believe

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at this point that this movement has the potential to facilitate the internationalization of women in the academy, as well as the emancipation of women in their various roles, since it reflects forces and movements that question the status quo and can promote awareness and discussion about what it is to be a woman in this postmodern age.

In terms of contribution to the topic of Internationalization of Higher Education, it is sought to increase the depth of the data by means of interviews reports, summing up, from the perspectives of the Brazilian researchers, new insights on the internationalization process. The second contribution is addressed to educational institutions, through the presentation of a scenario of current data that allows understanding the networks that prevent the best use of women in the academy and make it possible to deal with causes and problems. Finally, we bring a contribution to women researchers by first giving them a perspective on the theme from equal peers, and then delivering value so that they can act more consciously in their field. In addition, clarifying on the possible barriers faced and making possible to know the factors that can facilitate his academic career in an international scenario.

The research was carried out with researchers that met the criteria of internationalization of higher education considering the Romani-Dias model (2018). In this model, the P.R.I.D. is considered, in which the researcher can internationalize his career in four aspects: Place - when he engages in academic activities outside his country of origin; Relationship - establishes professional interactions with academics and institutions outside their home country; Impact - with broad academic and practical use; and finally, Dissemination - with publications and applicability of works outside their country of origin. The criteria chosen consider internationalization in higher education at its individual level.

2. LITERATURE REVIEW

Why do so few women internationalize their careers? What is behind this problem? In this section it was chosen to approach the most relevant and recent studies of the theme "Internationalization of Women in Higher Education". The research was conglomerated by three main themes: motivators, barriers and facilitators.

Building an international career presents itself as a challenge to any researcher, but especially for women, some obstacles appear to constitute even greater barriers to being transposed. The topic it is of great importance, mainly because it seeks to expand the studies of internationalization with a gender perspective, especially for bringing a vision of Brazilian women (the studies found refer to women from other countries of origin). This micro and regional vision becomes important when we consider, for example, cultural traits, as in some countries in the East. One example is Saudi Arabia, where the challenge begins with respect to women's rights in their own country of origin. In a study conducted by Ahmed (2016) on researchers who were in Canada, she found the difficulty of law over existence itself, since women rely on their guardian (father or husband) to have authorization to take their passport, basic premise for internationalization and subject already surpassed for male researchers. It is visible at this point that the barriers faced by women in their internationalization vary according to their country of origin.

The great majority of the studies contemplated in this review of literature are based on the methodology of qualitative research, with interviews of semi-structured scripts. Standard repeated in this article. It is hoped to advance in the subject including new perspectives beyond those researched and finding some global traits in the Brazilian researcher.

2.1 MOTIVATORS, BARRIERS AND FACILITATORS

First, it is interesting to distinguish the phenomenon of globalization at the expense of internationalization. Ahmed apud McCabe (2016) differentiated these two movements: globalization is a process of unification and attempt to make common economic, cultural and educational policies and

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systems. While internationalization is the process that allows people to identify with the social and cultural characteristics of another country, thus having the desire to experience this other reality.

The researcher seeks the internationalization of her career for some reasons, among them, for Arthur et al. (2007) are the opportunity to understand a new culture, improve communication with the international community and breadth of worldview. For Arthur et al. (2007) it is also clear that women are motivated by internationalization because they believe that this will bring greater credibility and appreciation to the academic community, which may lead to career growth. Still as motivators they count the expectation that they will be able to obtain benefits for its institution of origin and society through the internationalization. For Ahmed (2016), the desire to build a social legacy was also demonstrated by researchers in Saudi Arabia who, through qualitative research, showed the desire to be an example to other women in their country of origin and the desire to contribute to the advances in Saudi society.

In terms of barriers, there appear to be more studies that address women's difficulties in internationalizing their careers. For Rostan and Hohle (2014), gender barriers are mainly visible when there is a need for dedication to research for long periods and when women constitute a family (internationalization for young and single women is easier). The historical obligation to care for the home, family, and elderly members seems to be the source of a number of other barriers that can undermine women's careers internationally.

There exists around all professions, especially in relation to the academy, a stereotype that the perfect worker is one who is married to his profession. That is, you have your total dedication to work. Ward (2014) raises how oppressive it can be for women to cope with the social pressures of being a mother and being academic in an attempt to meet typical career demands that are often stifling and exhausting. Clark and Hill (2010) categorically state that women are less successful in academia because of their dual or triple role in society (scientist, wife, and mother). For Ellemers et al. (2004); Wolf-Wendel & Ward (2006); Hogan et al. (2010), in addition to the social obligation attributed to the woman regarding the care of the children and the family is a relevant factor for the fall of opportunities of the woman researcher, this factor also contributes to the stereotyping of women in the academy. Another point considered by Ward (2014) is about the path of preparation for the academic career (which involves many years of dedication) and the biological clock to be mother to sound at the same time. The woman becomes apt to occupy a vacancy of teacher near the 35 years and the stages of life try to generate conflicts in the existence and lifestyle of this woman.

Again, the data seems to be aggravated when we put in the analysis of countries with more traditional culture. A survey by Moreley (2014) in Japan found that 62% of wives of male college professors are housewives. As a result, most of these professionals do not care about home affairs. A woman in Japan has to take care of her children, as well as her parents and sometimes even her husband's parents, in addition to household chores in everyday life. They apparently suffer from cultural pressures and do not have time to focus on doing research. Those who achieve better academic results suffer from the sacrifice of personal life. In Japan, the percentage of university teachers who do not marry is 47.5%. Armenti (2004) studied the impact of the children in the career of the academic woman and her qualitative research was able to verify, through the reports, how suffering the internal and external psychological pressure was for these women. The woman is pressured to produce academically and feels very guilty for not exercising motherhood in its fullness, also worrying about who would leave her children. It is evidenced in some points of this report that the woman is still often alone in the exercise of motherhood - without the necessary support of the social, academic and family environment. Ellemers et al. (2004), has shown in her research that academic women are more likely to spend more housework than men.

For Hogan et al. (2010), women may still be less interesting for students because they believe that the female researcher will have less time to devote herself to research precisely because of family

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obligations. Ellemers et al. 2004 accuses in her study that women can also be seen as less committed to the academy, even if this fact has not been proven. Discourse stereotyping leads to fewer opportunities for women in the academic career. All this judgment has the potential to guide talented women away from pursuing teaching careers at higher education institutions based on the implicit assumption that academic and mother roles are incompatible (Wolf-Wendel & Ward, 2006). It is important to emphasize that stereotyping does not come only from men. Ellemers et al. 2004 demonstrated in her research that older women are more active in judging new entrants to the academy. Perhaps because of the difficulty experienced in the construction of the academic career, these researchers identify with masculine characteristics, sometimes being able to oppress colleagues of the same gender.

There are also, as barriers, distance and culture. The concern with the family is again, according to Arthur et al. (2007), a limitation. According to her research, women try to reconcile the proposals of internationalization to meet the family demands, and may even restrict their destinations to places closer and more favorable to mobility. Cultural aspects of different countries can also be seen as limiting for women researchers. For Arthur et al. (2007), countries considered sexist, where women and men are not considered equal, are not viable possibilities for many women. Hogan et al. (2010) identified in her research that there is fear and insecurity about the physical and moral integrity of researchers when they consider certain countries, in addition to the fear of not having a support network abroad to guarantee their own protection.

Another aspect that can be converted into limiters for the internationalization of women was raised by Hogan et al. (2010), which reveals that in some more masculine fields such as STEM (Science, Technology, Engineering and Mathematics) the introduction of the female researcher in an informal way is more difficult. This fact is also reflected in the professional career, according to the Report on equality between women and men in the EU (2018). Across the EU, only 20% of women over 30 who hold diplomas related to Information and Communication Technology decide to remain in the technology sector. Research into women's motives to leave STEM employment points to the effects of the workplace culture - still largely closed to gender issues. Another point raised in research by Hogan et al. (2010) is the introduction in academia. The entrance of the man is through the social routes, usually introduced by some mentor or informal teacher with members of the academy, something that does not happen with the same frequency for women. Roten (2011) raised another issue that becomes a limitation for academic women, identifying that the work of researchers is less publicized than the work of male scientists, a fact that impairs their relevance and visibility and affects their process of collaboration and internationalization.

In addition to all the social issues addressed and cited as limiters and barriers, there are even more subtle aspects regarding the limitation of women in their internationalization. Armenti (2004) brought in his conclusion a research that reveals how systematic the oppression of women is in their broader exercise of life as an academic and mother: guilt. The author points out that even though there is a social problem as a systemic problem or even a gender bias, women are accustomed to blame or relativize the difficulties faced.

And faced with the possible barriers faced by women, what can facilitate their social emancipation, their academic experience and the internationalization of their career? Looking through the social prism, Molina (2006) raises how, in postmodernity, maternity begins to lose its central value and begins to be relativized by women - maternity that sometimes represents the antagonism of academic career and internationalization. There is, around the woman in this new context, discussions that make her question about her social role and inferior status. New values begin to emerge pointing a new horizon for women to a path of self-realization. This can make society evolve in its behavior. This is because, according to Molina (2006), maternity, for example, is no longer an individual experience, but an experience shared in a social way.

By entering more actively into the structure, the construction of a facilitating network to support the

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internationalization of the female researcher's career becomes fundamental. Wolf-Wendel & Ward (2006); Clark & Hill (2010); Bozeman & Gaughan, (2011); Ward (2014) proposes a structural transformation in academia. Among the proposed changes are policies that support women and men in the exercise and simultaneous ownership of paternity including better parental leave plans. Data pointed out in the Report on Equality between Women and Men in the EU (2018) show that when new parents take parental leave, mothers return to work more easily, female employment is higher and the income gap between men and women is lower. Clark & Hill (2010) also point out as an alternative the provision of kindergartens for teachers' children.

Development a network of mentors also seems to be an interesting path to empower the internationalization of women. Arthur et al. (2007) showed in her research reports of women who managed to "shorten" the path of internationalization, precisely because they had the help of academics who already had the experience they would like to obtain. In cultural terms, it may be interesting to support the female researcher to understand the habits and customs of the country chosen, as well as the network support that she will find abroad. Hogan et al. (2010) pointed out that there are researchers who are afraid of not having support abroad to face embarrassing situations, such as sexual harassment for example. The Unesco's report (2015) also presents some governmental initiatives as a potential solution for the cultural treatment of gender inequality. These interventions have the potential to contribute to the participation of women in the academy, including quotas for women in the top positions on the board of directors (Germany), scholarships that take into consideration the proportion of women in the faculty and of researchers (Japan), or even the creation of a ministry focused on promotion, integration of women in national development (Republic of Congo). Ahmed (2016) reveals that in Saudi Arabia, many women have evolved their instructional level and their opportunities for internationalization due to public policies, such as the Kig Abdullah Scholarship Program, which has provided some of the study in Canada.

However, Ward (2014) cautions that adding policies or practices alone is not enough to create gender change in colleges and universities. For the author, neo-traditional families still attribute to women a stereotype of what it means to be a "good mother," just as women are assigned to housework, even if they keep their full job in the academic world.

3. THEORETICAL MODEL

This article seeks to answer the following research problem: Why do so few women internationalize their careers? The work in question is of a qualitative nature. Qualitative research demands that the researcher fit the field of study, becoming an actor in the social system. Being a good listener is a sine qua non for a quality study. The researcher must feel as part of the system of representations and behaviors of the analyzed actors, in order to extract their details and have bases for the construction of an analytical point of view from the external perspective (ALAMI; DESJEUX; GARABUAU-MOUSSAOUI, 2010).

This approach made it possible to establish relations and categorizations of the internationalization of higher education of female researchers through the triangulation of the data analysis between the literature and the respondents' answers that experience this phenomenon and our perceptions. We conducted this research following the methodological guidelines of Leech and Onwuegbuzie (2007).

Firstly, a review of the literature on the themes focused on the work was carried out. It was based on the construction of the semi-structured script (which can be consulted in the appendix), following the concept of the analytical categories, the instrument of data collection and analysis and discussion. The following analytical categories were defined constitutively: motivators, barriers and facilitators of the internationalization of women in higher education.

There were 7 interviews with an average duration of 50 minutes. The choice of the research participants was based on the criteria established by Romani-Dias (2018) and all met at least one of the four criteria

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established by the author for the internationalization of the career. All of them are full-time researchers, 4 of whom have graduated in masters and / or doctorates abroad. Below the profile of the respondents (the real name was preserved):

Table 1. Profile of interviewees (fictitious names)

Nº	Name	Age	Position	Marital Status	Children
1	Maria	35	Substitute Teacher	Single	No
2	Marília	35	Teacher	Married	1
3	Julia	38	Teacher	Married	1
4	Taís	41	Teacher	Married	No
5	Larissa	43	Teacher	Married	2
6	Milena	60	Senior Teacher	Married	2
7	Silvia	65	Teacher	Married	3

4. EMPIRICAL SECTION

The interviews were recorded with the consent of the participants, transcribed in their entirety and analyzed in their entirety by the researchers of this article. Then, following the precepts of Creswell (2003), the comparison between categories of analysis was made, thus seeking to increase the reliability of the research. Based on the analysis of the transcripts obtained, according to Glaser and Strauss (1967), the most relevant categories of analysis for this article were obtained.

In the next step, with the definition of the main categories of analysis derived from the comparisons of the interviews, more analytical (secondary) categories were structured, based on the guidelines of Strauss and Corbin (1990). This process was carried out in a thorough way, as it demanded, in addition to the analysis of the interviews, an in-depth return to the literature on the subjects, which resulted in three macro categories (motivators, barriers and facilitators) and their secondary categories: the institution of origin and society; Career development (credibility, valuation and growth); Extension of culture and knowledge; Socially attributed responsibilities of women (care for the family, maternity); Fear, insecurity and prejudice; Mentors to facilitate internationalization; Training to teach practices, customs and culture; Policies to encourage internationalization and balance the activities of women at work and in the family.

Table 2. Encoding scheme, illustrative data and literature

Theoretical dimensions and main references	Second order categories	Exemplary quotations (selected examples)
Motivators Arthur et al., (2007)	Advantages and benefits for the institutions of origin and society	"It was very good for my department, then I can share a lot with the teachers that were, even in the psychological preparation to face this difficult experience, I believe that it contributes a lot to my department in that sense." "... it was great afterwards, because I started to help the people who started going out, and I was able to help a lot of people, the department, to create this culture of welcoming those who return."

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Arthur et al., (2007)	Career development (credibility, valuation and growth)	"In my home institution a new line of research was opened with the theme that I developed abroad." "[...] the gain I had was in recognition, I was invited to the coordination, there was a movement in my role in the program." "I think if I had not had this international experience, I would have taken much longer to achieve what I achieved. Today I'm a graduate professor of a good university, having a very nice salary ... I only got these things because from there I started to publish..." "Internationalization was a differential in the curriculum that helped me achieve my current job. The international experience made a difference in my research that would never have been without it.
Arthur et al., (2007)	Expansion of culture and knowledge	"You're out there, socializing, sitting at the table with people from other countries, other experiences, it's very interesting, I think it broadens your horizons. You know closely the perspectives of others you read, there is different you are with the person, talk other things, learn and absorb from the cultural part. " "For my career, internationalization has brought me the possibility of being able to talk to science in the world." Ripped me out of my nest. I felt that this experience ripped me from myself because I went to see how many things I thought I knew because I looked from my place, from my experience ... I believe I learned a lot! "
Barriers		
Ellemers et al. (2004) Armenti (2004) Arthur et al. (2007) Hogan et al. (2010) Clark e Hill (2010) Ward (2014)	Socially assigned responsibilities of women (care for the family, maternity)	"Because a woman has all this question, even though I have a husband in the academic field, I already took on more things." "[...] you will always be judged, people will say that you are" denatured "; they will say, "how dare you leave the child." It's a full plate for her mother-in-law to say whatever she wants. " "Here I come, I think the question of women, this is a difficult task, in my case, I am a woman, mother, I have a triple work day, with work, home, family, children ..." "I remember having colleagues who had the opportunity and it was not because they did not have the possibility to separate from the family. It was a huge cost for me." "Today, as the mother of a baby, I do not realize concrete possibilities of international travel for continuity of research. This will outdate contacts and make internationalization difficult in the future. "
Arthur et al. (2007) Hogan et al. (2010)	Fear, insecurity and prejudice	

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		"I was in a very internationalized university that was absolutely internationalized, but from there I was afraid and afraid, I was afraid to be alone and to be a woman ... I wanted to go to Jerusalem and I regretted going alone [...] a man followed me for blocks and I did not say a word. Nothing happened, but it was not cool. " "Today in Bolivia, I perceive a different reality, in the context of a context that I was living in (Germany). Bolivia is a country that, like Brazil, is still very sexist, and the insertion of women in the academic and professional spheres still does not match the European reality. "
Facilitators		
Arthur et al. (2007)	Mentors to facilitate internationalization	
Hogan et al. (2010)	Training to teach practices, customs and culture	"[...] we started, I always worked with her, she is my mentor ..." "I did have a mentor. My advisor, (hidden name), was my master's and doctoral advisor. You've always supported me with these things. We are now editing a book together. Anyway, he was always a person I trusted a lot. It always put me way ahead."
Wolf-Wendel & Ward (2006) Bozeman & Gaugan (2011) Ward (2014)	Policies to encourage internationalization and balance the activities of women at work and in the family	"[...] we had many teachers who were, but did not receive, enter, come back without much return of the partnership. They did not have policies in that sense [...] I see that internationalization in my career was not quite what I imagined. " "[...] The language, I speak neither Dutch nor Hebrew, of course in basic Hebrew Israel I learned. I also do not speak Dutch, but the difference is that it is there everyone speaks English, the language I had the most difficulty was in Israel, because there you can choose between Hebrew or Arabic. It's looked like a tribal abstract, looked like a tribal tattoo." "You are always the foreigner, you always have an accent. It is an obstacle. I have domain of the written part and communicate in English, but I do not have a conversation in English ... " "Contacting research groups from abroad was difficult too." "I do not see a clear and defined policy for internationalization. They encourage, if you go very well, the incentive is so I:" Geez how cool you will, "but it does not happen in terms of" Look, let's offer scholarships to teachers will ... " "... At the University there are no policies, they only speak, they say they need to, but they have no objective condition, quite the contrary." "These are very early rules. Internationalization is one of

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		the requirements requested by the MEC. At PUC there was no incentive, but at FEI they supported it more. "

Source: own elaboration.

5. CONCLUSION

It was very interesting to cross the data with the profile of the Brazilian researcher. Many of the problems in other parts of the world raised by the literature review are also shared by the researchers interviewed. One of the easiest categories to achieve convergence was the one that portrays the socially attributed responsibilities of women (care for the family and motherhood). The reports seemed very forceful even portraying the reality of the country. Prado (2012) in her study on the profile of the Brazilian researcher had already verified something that we reiterate in the results of this research: there is the difficulty of the Brazilian researcher woman to reach higher hierarchical levels even with the greater feminine insertion in the academy. Inhibitory factors (barriers) are greater than the promoters (facilitators). And finally, the conflict between career and family responsibilities is very intense early in the career, especially because of the lesser participation of the spouse in the performance of domestic activities.

As the excerpt noted:
The (husband's name hidden) left in the morning and returned only in the afternoon, I had to go out and take the children to school, then I would do the research, get out of the search, get the kids and at night I had to work from home [...] because woman has all that question, even though I have a husband in the academic field, I already took on more things. Imagine the woman with husband of another profession /company, woman does not go alone - referring to internationalization (interviewed 7).

Perhaps the multitude of roles that women occupy in society is still one of its main barriers. This macro category (barriers) has been more prominent and not only in the literature review (there are more authors that address barriers than motivators and facilitators), as in this research. In addition to the points presented in Table 1, there are also other elements present in the interviewed researchers' speech that appear in a smaller proportion in the interviews and still without reference directly found in the literature. As an example, we find the solitude and sacrifices of personal life (social life and health):

> I went alone, there because of that I had to reduce the time of my stay there a little. I stayed two months and a half on my way to Holland [...] For Israel I went alone, it was almost six months. [...] I gave up a lot in my career, Mother's Day, wedding anniversary, a lot ... my youngest son is 11 years old so he had a big impact with my emotional outing to ask my mother, as much as we talked a lot about Skype, it has an impact yes. (Interviewed 5)

> But much of this suffering goes far beyond what we are accustomed to, as a woman, I went without my husband, my children also stayed, and that is another very high cost [...] It was very harmful to my health, I came back kidding to the people prepare to break teeth, have bruxism, renal colic [...] in 2013 I had a brain ischemia here at the university giving a class. So I think it was a very stressful period (referring to the Post-Gold outside the country), when I came back I had a lot of production, and also a lot of myself, wanting to deliver the result, consolidate the partnership." (Interviewed 6)

> You stop prioritizing some things, it's a decision where you have to give up some things. Decision and know how to let go of conveniences (Interviewed 7).

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The aforementioned excerpts make the counterpoint with that presented by Arthur et al. (2007) as a potential facilitator of the internationalization of the academic career of women. The author shows in his research that having the support of the spouse in being willing to go along with the researcher to another country can facilitate the choice for the woman. As described in the above excerpts, it really seems that it is a factor that weighs on women: loneliness, distance from the family and the sacrifices of personal life.

It was interesting to note with the interviewees that some reported as difficulties the language and public education, being these limiting their internationalization. The predominant foreign language in the world is English, being a difficulty for the absolute majority of Brazilians. According to a survey carried out in 2014 by British Consul together with the Data Popular Institute, only 5.1% of the population aged 16 or over claims to have some knowledge of the English language. The following passages once again reflect evidence of Brazil's cultural traits:

> For those who attended public education there is a very great lack of basic knowledge that many of my colleagues had acquired from private education, and that in my case, for always attending public education, demanded a great effort. (Interviewed 2).

> One of the difficulties was linked to the lack of knowledge in another language, I had to invest a lot, due to the fact that the public schools in which I studied did not invest much in this area. (Interviewed 4)

> It was a lot of tension and I, despite speaking English from my teens, the experience of going into the classroom with a researcher was very different. That was not the English I knew how to speak, the academic genre in the foreign language is very different from everyday language in English. (Interviewed 6)

Another highlight and point of convergence of more than one interviewee was the lack of recognition that happens before the internationalization of the career. It seems that, according to the interviewees, there is the "pressure" to internationalize, but under moral and financial recognition.

> In terms of salary there was virtually no gain. I was invited to take up this Coordination issue I had a move from my role here within the program, issues like this [...] I posted a high impact A1 article about two weeks ago and there is no acknowledgment from the institution. I'm not complaining, but depending on the University I had I could earn a good bonus for this. (Interviewed 5)

> We have a cultural characteristic that there is no direct valuation of who does the processes of internationalization (study, research, publication). It passes a little for the human world, there is no way in the professional world to recognize it, it has a small group, but the group generally does not recognize it. There is no formal appreciation. It's not like in the company, where you get a new job or congratulations on a done off, it's subtler, it's got a devaluation or a kind of envy, the other was, there's the recognition, there's a not recognize. It's a cultural thing (Interviewed 7).

> Financially no recognition. When you return your colleagues do not receive you with open arms, you come back full of will to share, but no one wants to listen. There is something called shock in return, it may be an outdated thing, which can not be generalized, but I have seen many people who have experienced difficulty in reinsertion, including psychological (Interviewed 6).

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In addition to what has already been mentioned, there are still points mentioned in the interviews in a more isolated way, which seem to be important points for future deepening, such as the difficulty in obtaining scholarships and the need to be a "student-worker" as the section below points out:

> There are few opportunities for Scholarships nationwide in the period in which I graduated (2001), and the constant need to work 8 hours a day in parallel with the studies at night, in order to be a student-worker, a reality, unfortunately still present in the lives of many students in Brazil. Lack of support programs and incentives to international scholarships in the social area during the graduation period (Interviewed 4).

The fact that two of the interviewees report not having felt difficulty being women in their internationalization still draws attention and deserves further deepening.

> In both the United States and Germany, compared to Brazil, I think that gender equality is much more advanced. Issues that are still taboo here are already completely overcome in both countries, especially in Germany. I think about my career, the strangles are much bigger in Brazil. (Interviewed 1)

> Being a woman, she did not change anything. I asked for a grant, I did the whole process and the merit is the project I think is evaluated. (Interviewed 3)

One hypothesis is in fact the geographic question chosen for the internationalization of both. They opted for countries with a more gender-equal culture as pointed out by Interviewee 1. Still, it is advisable to deepen this question for the arrival of more conclusive results.

The main contribution with this article was to advance a little more in the theme of the academic internationalization of women. We have advanced, mainly, to reinforce the topics covered by the international literature, identifying points of similarity. We identified that there is still room for deepening and exploration of the topic studied. Taking into consideration the Brazilian researcher's perspective, we highlight as an opportunity to study: the isolation and privations of private life, the difficulties of public education deficit and limitation of the foreign language and the low recognition of the efforts made to make internationalization happen.

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PHYSICAL ARRANGEMENT AND ITS APPLICATION TO THE TEACHING ENVIRONMENT

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ABSTRACT
The present study sought to demonstrate how significant the physical arrangement can be for the quality of knowledge transmission in educational institutions. In this way, the different types of physical arrangements, information on the creation of pedagogical environments and classroom configuration patterns were explained in this article, with the aim of finding the layout that best meets the specificities of the teaching environment. A bibliographic research was carried out through the contribution of several authors, in order to give a theoretical basis on the importance that the correct layout of a classroom can have for the teaching-learning process and for the creation of pedagogical spaces. It was concluded that the choice of the correct physical arrangement can bring significant increases in effectiveness and efficiency in content transmission, as well as in the flow of people, in the well-being of the actors that make up the teaching environment and in the quality of the offered education.

Keywords: Layout. Physical arrangement. Teaching. Classroom, pedagogical environments and classroom configuration.

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INTRODUCTION

The way in which the use of the physical space of a classroom of an educational institution, its organization and the better physical arrangement of the furniture can generate an increase in the effectiveness and efficiency in which the communication takes place and, this way, to stimulate an improvement in the education's quality.

There is an expectation that diverse environments lead to the favoring of different types of interactions. In this case, teacher and student have a fundamental role in the organization of spaces where there is the educational process, creating the flow of people and information of such environment, which can directly impact the quality of teaching provided by an institution and the dissemination of knowledge and learnings. Studies in the pedagogical area show that educational institutions, aiming to increase the quality of teaching in the teacher-student relationship, end up paying more attention to the pedagogy of teaching used in the classroom, minimizing or excluding the impact that the correct layout may have in these environments, indirectly generating obstacles to the achievement of their objectives. Thus, there may be an increase in teaching pedagogy when the physical space provides better conditions, generating an environment that stimulates the increase of quality in the teaching-learning process.

The business environment already has greater experience in the study and implementation of different layouts, since it has a definition of the correct physical arrangement and can give very expressive results in increasing productivity and efficiency. There are a wide variety of layout types, each one of which will be easier when it is more suitable for companies, because each layout will have its resources to flow materials, people and information, as well as avoid and find bottlenecks.

The present study searches through a bibliographic review to present the impact that a layout can have on the education and quality of the teaching-learning process. In order to do so, it identifies the different types of physical arrangements and other characteristics of the layout of a classroom that can influence the learning process.

DEVELOPMENT

Physical Arrangement can be defined as a form of resource for organizing people, materials, sectors and facilities of a particular institution. For Chiavenato (2005) physical arrangement is the way in which the productive resources distribute themselves as adequately as possible throughout the manufacturing process of a manufacturing. According to Peinado and Graeml (2007), it is subject with greater visibility and exposure in most organizations. When there is an effective structuring of the physical arrangement, a significant improvement in performance and productivity results is achieved. These aspects have a notable influence on the way in which the organization is managed.

Slack, Chambers and Johnston (2009) and Moreira (2008) affirm that determination of physical arrangement for a company is linked to the organization of its sectors and facilities, so that among them it exchanges information regarding the totality of activities, considering that in the whole productive process there is a dependence on the interaction between the sectors. From this point of view, it can be stated that the physical arrangement will directly influence the flow and performance of an operation's activities and must be implemented in order to reach its objectives, strategies and needs of the company.

The determination about the best type of physical arrangement is closely linked to the need of each organization, according to Sales et al. (2012), it is necessary to evaluate: nature of the operation; type of product to be processed or type of service to be performed; type of people's flow desired within the system as a whole; the flow of information exchange between people and sectors; and circulation of materials within this system. In order to obtain the appropriate physical arrangement for each type of operation, the decision-making must be based on a solid planning and with a high degree of detail.

According to Slack, Chambers and Johnston (2009) we can distinguish four main types of physical arrangements from which most of the layouts branch, being: positional or fixed position, linear or by product, functional or by process and cellular.

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Neumann and Scalice (2015) affirm that fixed position arrangement is considered among the various types of layout the most basic and usually its use occurs when the product has large dimensions, which makes impossible or difficult their displacement. In this layout we have as a great characterization the fact that the material to be transformed keeps still, while the workmanship and the equipment move around to him. Usually, we have this layout associated to very large products and produced in small quantities (VIEIRA, 1976).

In accord with Peinado and Grau (2007) the main advantages of the physical arrangement are: non-movement of the product and the possibility of eventual outsourcing, with fixed deadlines, part of the project or of the project as a whole. The same authors are the main obstacles that are of a greater degree of complexity in the supervision and control of the productive process, besides the use of external areas for the production.

Already for the layout by product, we have the production organization in a way that favors the proper circulation of the resources to be transformed. Vieira (1976) states that this type of physical arrangement is usually applied in assembly plants. The organization of the machines takes place according to the sequence of operations that will be performed. The machinery remains fixed while the material to be processed moves. This physical arrangement is suitable for installations that produce a small number of products, but in large quantities. We can exemplify automobile industries (MOURA, 2008).

Peinado and Graeml (2007) say that this type of layout was idealized in Henry Ford assembly line factories. The machines, the equipment or the workstations have their allocation according to the sequence of assembly, without the existence of some alternative way for the productive flow. Then, it allows obtaining a fast flow for the manufacture of standardized products. Other advantages to be mentioned are the small unit costs for the company which generates an operating leverage, the optimization in the movements of materials or customers and also the existence of more specialized equipment to the production process. Among the disadvantages can be mentioned the high degree of repetition of the work, the low flexibility in the product mix, besides the high fixed cost.

Another physical arrangement to be quoted is the functional one, which is also called process or still as a job shop. Slack, Chambers and Johnston (2002) describe as fundamental characteristic of this type of layout the fact that operations of the same nature are grouped.

According to Peinado and Graeml (2007), the advantages of this type of physical arrangement are its high degree of flexibility in meeting demands, the quality of service of diversified products in varying quantities at the same time, robustness against interruption of stages and easy supervision of facilities and equipment. As the disadvantages of this type of physical arrangement, we have the distances traveled between each operation, the low resource utilization, queuing and a flow with control difficulties due to complexity. These points can increase complexity and costs in a manner proportional to the size of the lots (TUBINO, 2007).

There is still the cellular physical arrangement, characterized by the fact that the resources transformed when entering the operation, are previously selected to move in a specific region of the operation in which is entirety of the transforming resources for the proper attendance of their processing needs (SLACK; CHAMBERS; JOHNSTON, 2002).

According to Slack, Chambers and Johnston (2009) we have the advantages of cellular layout which are the good balance between flexibility and cost for operations with a considerable variety of products, short cross-over time and increased employee motivation for group work. Among the disadvantages is the cost related to the reconfiguration of the current physical arrangement, possible need for additional capacity and a reduction in the level of resource utilization.

The correct selection and suitability of a physical arrangement can lead to some changes in the positioning of machinery or products, which can lead to new flows of materials and people in a given environment. This may influence a variety of factors, including the efficiency of production (LOPES, 2011), or, in the case of the present study, the effectiveness of the teaching-learning process.

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According to Alves (2001), in his Manual of Didactic Environments, there is a search for the introduction of concepts and guidelines that help in the definition of didactic environments. This is done through recommendations, procedures and standards, in order to establish a set of relevant concepts, data and references in the reformulation of didactic environments in order to make them more efficient. The environment of the classroom is fundamental for the man, being, in general, the first place where a great part of the population comes to carry out an activity of systematized way, in which years pass so that the due process of learning occurs. In this way, the classroom furniture can be considered as a factor of great relevance and this can get to have great investments in the organizations, considering its fundamental nature in order to properly carry out the activities in the teaching environment (OLIVEIRA, 2006).

Considering the questions presented, we also have the continuous and growing concern about the quality of teaching, both by the students and by the teachers. There is also the concern of government and companies to generate trained professionals. This concern is due to the high degree of competitiveness of the market, requiring future professionals to obtain the best possible training over the years. It is in this scenario that the connection between the teaching environment and its layout becomes more evident, since in providing the correct layout, there is an increase in the transmission and absorption of knowledge within the classrooms and the teaching institution as one all (SEABRA; SOARES; ROSSET, 2017).

The educational institutions are always in search of new resources, teachers, pedagogical teams and employees, trained in the best possible way, in order to make possible the correct development of the students during the academic training, offering the appropriate teaching environment. There is also investment in books, study rooms, computer rooms and laboratories (BOLFER, 2008).

But there is the realization that despite the many investments in improving the quality of teaching, the classroom as a physical space and the distribution of students per class, still are obstacles to reach a high level of education, because there is a improper planning and management. Investments in layout and the ergonomic quality of furniture are still not seen as something to be prioritized, as they do not lead to tangible results, are seen as costs without guarantee of return on investment (SEABRA; SOARES; ROSSET, 2017).

The classroom environment should not only be functional, but should also generate comfort for all who use it, be they students or teachers, because it is the main environment of this system of education. In this way, all its forms of use must be taken into account, considering the number of users and the ergonomic conditions (PEREZ, 2002).

Ergonomics can be another point of contribution for teaching, since it is a considerable factor between the dynamics of the environment and the integration of all the people who interact in it, especially the students and the teachers. Such a point is relevant, since the ergonomic adaptation of the classroom environment allows a greater degree of effectiveness in the transmission and exchange of knowledge and learnings between teacher and student, being an important tool to assist the teaching-learning procedures (WILHELM; MERINO, 2006).

The arrangement of the physical space used by the teacher in the classroom is a considerable factor for its performance, since it can positively or negatively affect the way in which the information will be transmitted, captured and processed by the students. Negative interferences may distort such information, making unclear the transmission of information by teachers and may even lead to difficulties in assimilating the content taught in class (COMIM, 2015).

For Piccoli, Carneiro and Brasil (2000) it is very important the study and planning of the physical arrangement of furniture and equipment in the environments, since it impacts on the comfort and, consequently, on the people's learning.

However, in Santos' view (1998), the theme should not only address the creation of the correct environment conditions for student learning, but should also take into account the need to train such

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students to improve the social spaces in which coexist in order to contribute to the transformation of such spaces into environments of experience for collective learning.

Another important point is that if the aspects of movement, comfort, attention, interaction between students and teachers, and classroom dynamics are not met in their entirety by the physical arrangement of the classroom, it is necessary that the space be reorganized to fulfill such demand. This can occur, for example, in classes with group activities or in doubles, where the need for a rearrangement of the space for the formation of these subgroups occurs. To do this, the chairs must be moved in order to meet this momentary need, but after the completion of the activity, the room must be organized in order to return to its initial configuration (MUNSBERG; FELICETTI, 2014).

Arends (1997) states that there is a diversity of teaching models and that each model results in a spatial organization of the classroom, each with its specific characteristics. One such model is the expository model, which has its representation given by Figure 1. In such a model of teaching, there is a prioritization by the institutions in organizing the chairs of the students in columns, establishing a more traditional spatial configuration of the classroom, which makes students focus their attention only on the teacher, the picture and / or the projection of images. The arrangement of the chairs in this model should remain in such a configuration, regardless of the dynamics or type of class, limiting the cooperative work among the students. What usually varies in such a model is the position of the teacher's desk, which can change according to the size of the room and the position of the door, being more to the left or right of the room.

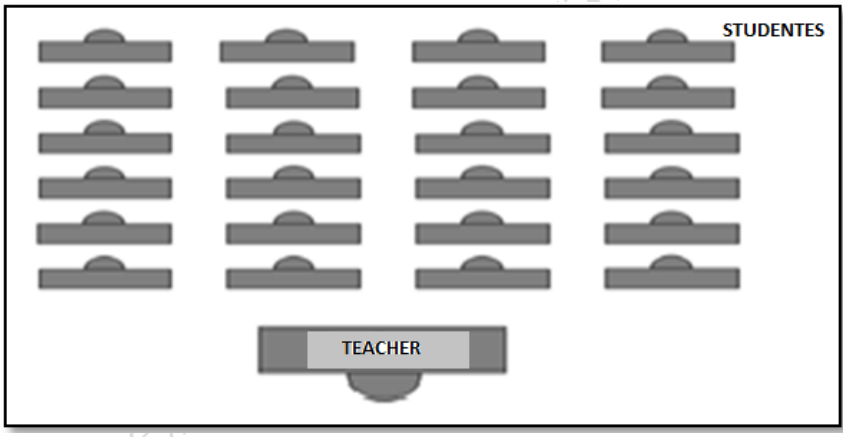

Figure 1 - Organization for Expository Class.
Adapted: Arends (1997).

We have yet another model that is explained by Arends (1997), being the model of direct instruction. There is a reduction in the number of lines, creating a closer proximity to the teacher, which makes the environment more conducive to demonstrations, to foment dialogues and debates between teachers and students. However, this spatial configuration hinders the formation of subgroups for group or double activities.

In this way, it can be affirmed that direct instruction model requires learning environments with strong structuring by the teacher and with orientation to the task (Teixeira; Reis, 2012).

In this model of teaching there is a need for more intense involvement on the part of the students and that the environment is properly configured for greater interaction and cooperation among the students. In this way, it is fundamental that the environment is designed to leave it as horizontal as possible, as shown by Figure 2.

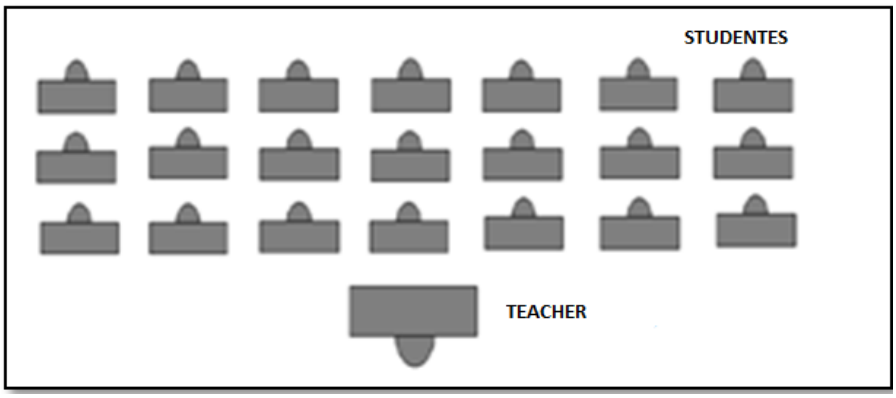

Figure 2 - Direct Instruction Model.
Adapted: Arends (1997).

It is important to note that furniture used by teachers should have the capacity to adequately accommodate all teaching materials relevant to teaching. As for the chairs, these should generate the comfort, besides facilitating the mobility and the flow of the students.

Carvalho (2005) states that the best position for students is when they are backs to the door, because in this way the movement of people coming and going of the classroom does not detract from the students' attention while the teacher gives his explanation of the content, since such a configuration avoids people moving in front of the blackboard, besides the teacher or of students who are presenting some work.

Alves (2011) suggests that the positioning of the door that gives access to the classroom is in a wall opposite the wall in which the blackboard is located, trying to prevent the flow of people entering or leaving the classroom does not generate distraction in the others, allowing a better course of the class.

CONCLUSIONS

In view of the mentioned points, one can perceive the significant influence that the physical arrangement can exert for the correct execution of the knowledge transmission process within the classroom. The correct choice of layout by the educational institution can impact the efficiency and effectiveness of the learning process.

It is noticed that choice of the layout is not only about the correct position of the furniture for teachers and students or the best disposition for the flow in the classroom, but it is the construction of an environment that propitiates and stimulates the propagation of knowledge, generating stimulus for all and emphasizing the student's role as constructor of the environment.

The educational institutions have the expository standard model and the direct instruction model as guiding standards for classroom configuration. These can serve as an initial model of the classroom, but which must be altered according to the particularity of each classroom that one wishes to design, so that the educational institutions reach their goals regarding the transmission of knowledge, quality, comfort, flow of people, among other quality indicators of education, providing the creation of appropriate and stimulating educational environments.

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MANAGEMENT IMPLICATIONS OF THE IMPLEMENTATION OF NEW TECHNOLOGIES IN HOSPITAL ENVIRONMENTS

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SUMMARY

The present article aims to carry out a systematic literature review to present the managerial implications of the implantation of new technologies in hospital environments. For its elaboration, searches were carried out in the Scopus database and the methodological process also used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) methodology and the "snowball" strategy to search for articles related to the researched topic. The Voisviewer software was used to generate conceptual maps that present the results of the research in terms of the main authors, main research countries and main keywords presented in the review. The technology evolution observed in the last decades allowed the development of innovations in several areas of the economy, including the health sector. One of the great problems of this evolutionary process can be expressed by the following research problem: What are the managerial implications of the implantation of technological innovations in hospital environments? As a result, the realization of this article allowed us to identify that hospital service companies need to develop skills to coordinate internal skills and integrate flows to ensure the best results.

Keywords: Management Implications, New Technologies, Hospital, Hospital Environments, Innovation.

1. INTRODUCTION

The search for the development and implementation of innovations in the business environment has intensified, especially since the 1990s, when Information Technology (IT) started to develop its first applications to streamline operations and implement innovation in internal processes in companies. (LEE & BERENTE, 2012).

As a result of this process, the service sector has sought ways to also benefit from these innovations to promote process improvements and seize new opportunities, with a focus on "Strategic Management of Innovation and Customer Loyalty" (WU, 2014).

In the health services sector, whose structure is characterized by the existence of several internal processes that are complex and interdependent (SOUZA et al, 2009), technological advances have given rise to new opportunities. (EUROPEAN PARLIAMENT, 2010).

Within this scenario, one of the main initial concerns was to manage the workforce to adapt it to this new reality, aiming at developing a system of continuous learning so that the health companies could develop "dynamic tools to support themselves in the management of new types of digital innovation processes ". (NYLE'N, HOLMSTRO¨M 2015).

In this sense, some managerial implications related to the application of new technologies in hospital environments were observed, such as those identified by Shaw (2003), referring to cost management and those pointed out by Souza et al. (2009) regarding the management of indicators for assess organizational performance.

Concern about the effects of this innovation process on human capital (or intellectual capital), considered as the most valuable capital of any organization (VAGNONI and OPPI, 2015), ratifies the

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need to deepen the discourses about the managerial implications of the implementation of new technologies in hospital settings.

To discuss this theme, the main objective of this article is to carry out a systematic literature review to present the main managerial implications of the implantation of new technologies in hospital settings. The results of this systematic review of the literature will be presented through tables and conceptual maps elaborated with the help of VOSviewer software.

The main contribution of this article is to identify how hospital service companies can develop the necessary skills to measure the managerial impacts of the implantation of new technologies.

The article is structured as follows: Section II presents the methodology used; Section III presents the theoretical framework, addressing the main concepts and approaches found in the literature; section IV presents the results and discussions and, finally, section V presents the final considerations.

2 METHODOLOGY

For the elaboration of the present article, the hypothetical deductive method was used, with a qualitative approach, through a systematic literature review (DRESCH, LACERDA and JÚNIOR, 2015), using also the PRISMA methodology - Prefered Reporting Items for Systematic Reviews and Meta-Analysis (LIBERATI, 2009), aiming to identify the main management implications of the implantation of new technologies in hospital environments. The research is classified as exploratory, because it aims to explain the problem to construct hypotheses or propositions (SILVA & MENEZES, 2005).

A systematic literature review is especially useful to identify possible gaps and uses protocols that can be easily replicated in order to understand a phenomenon through a conceptual analysis through an existing literature mapping.

During the initial stage of the research, which took place in August 2018, searches were carried out in the Scopus database, using the following terms: "managerial implications" AND "new Technologies", which generated 663 documents. A temporal restriction was used for the period between 2014 and 2018, by type of "articles" documents, in the areas of "Business, Management and Accouting". As a result, 107 documents were found.

These 107 articles were selected for reading their titles and abstracts, aiming to identify those who presented alignments with the researched topic. As an inclusion and exclusion criterion, the analysis of the alignment of the publications with the theme of this article was used, excluding those that did not approach the theme or approached it partially.

As a result of this process, after the analysis carried out, there remained 7 documents, which were downloaded and read in their entirety, serving as a conceptual basis for the elaboration of this article. Aiming to reinforce the conceptual framework, the "snowball" strategy was used to select new articles, which culminated in the inclusion of 30 more references. In this way, the total number of articles used was 37 articles.

In the end, the software Voisviewer (VELMURUGAN and RADHAKRISHNAN, 2015) was used to construct tables and conceptual maps, presented as a way to facilitate the visualization of the final result of this systematic literature review.

3 THEORETICAL REFERENCE

3.1 The Technological Evolution

The process of technological evolution, observed throughout history, has experienced a great moment of intensification since the 1990s, when the first generation of IT applications - IT enabled companies to streamline their operations, offering opportunities for the deployment of innovation in internal

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processes (LEE & BERENTE, 2012).

The properties of this new technological moment, which has intensified since then, have allowed the emergence of new types of processes, requiring more and more the development of internal innovation, expanding possibilities and generating new challenges for companies and their managers.

The company's ability to innovate has been related to internal and external factors associated with collaboration networks. "These networks are an opportunity for companies to increase the quality of knowledge to which they are exposed" (XU, RIBEIRO-SORIANO, & GONZALEZ-GARCIA, 2015).

The advances made in Information and Communication Technology (ICT) have made it possible to develop innovations in the service sector, requiring companies to prepare for the exploration of new opportunities. According to Wu (2014), "Managing technological innovation is important for companies to gain and sustain competitive advantage." Wu (2014) further states that two areas are relevant to service innovation research: Strategic Innovation Management and Customer Loyalty.

Digital innovation required the development of continuous learning for the exploration of new technologies and for the understanding of the opportunities that emerged from then on, which demanded the search for the constant qualification to the development of the necessary skills in the members of the team.

The new technologies and digital innovations introduced in the market required the development of skills previously unexplored by most companies, causing the need to adapt the workforce to this new technological reality and the need to manage the mechanisms of support and continuous learning so that companies could develop a holistic view of the digital innovations needed to adapt to changes in the market. "Therefore, companies need dynamic tools to sustain themselves in managing the new types of digital innovation processes that emerge." (NYLE'N, HOLMSTRO¨M 2015).

One of the great challenges of this scenario was to seek to understand how these technological innovations should be managed within the companies in this new digital environment and to find out what skills were necessary for companies to benefit from the transformations introduced. In this respect, digital innovation requires companies to develop new skills without, however, giving up old existing skills or making them obsolete (NYLE'N, HOLMSTRO¨M, 2015).

3.2 Digital Innovations in the Health Sector and the Management Implications in Hospital Settings

The health sector or health system can be understood as an organization of medical institutions, users, professionals and equipment to offer services, aiming to meet users' health needs (PARLAMENTO EUROPEU, 2010), constituting a traditional and prone sector to the development of innovations.

The health system is a relatively complex, harmonious and integrated division that involves staff, physicians, and system layout in relatively unstable activities requiring cooperation in caring for human life (TALPUR, 2013). the difference of the other companies.

Among the characteristics of the health sector, the rapid and adequate treatment of the flow of information, constitutes a great differential to improve the agility and the result of the consultations. The technological advances have given rise to opportunities to improve the current state of the health system, offering a more personalized service (EUROPEAN PARLIAMENT, 2010).

When analyzing the health sector, it is possible to perceive that the great majority of innovation processes occur in hospital environments. A hospital, in turn, is one of the components of the health system, whose function is to provide care services, and can be described as an organizational element with a medical-social nature, which acts in the provision of "specialized services and presents differentiated functions, thus characterizing itself as a very complex organization "(SOUZA et al, 2009).

For the World Health Organization (WHO), hospitals are considered to be establishments that have at least "five beds for the hospitalization of patients, which guarantee a basic diagnosis and treatment service, with organized clinical staff and with proof of admission and permanent assistance provided by

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doctors "(BRAZIL, 2011).

One of the main characteristics of hospitals is that their structure is characterized by the existence of several internal processes that are complex and interdependent (SOUZA, et al, 2009), presenting some difficulties of management due to their conjunctural dimensions that interact with each other, according to figure 01 , below:

The focus of the management of each of these dimensions is specific, and in the Financial dimension the focus will be on costing mechanisms; in the Political dimension, will be in the establishment of regulatory mechanisms of the hospital system; in the Organizational dimension, in the network of services; In the assistance dimension, the focus will be the "technological organization of the work developed in the hospital scope to health, which calls into question the clinical model and its developments in modern technological medicine"; In the Teaching dimension, the focus will be teaching-learning of the different health professions, all of which have implications in the Social dimension (BRAZIL, 2011).

In this aspect, the assistance dimension will be the focus of the analyzes proposed in this article, due to the fact that in this dimension, the development or use of technologies will require the implementation of management tools capable of contributing to the smoothness of the work and to the achievement of organizational goals.

Another relevant factor for the study of the assistance dimension is the fact that to act in this dimension, there is a need to understand the context to develop the most appropriate management tools. According to Evans, Hwang, and Nagarajan (2001), "the use of tools for hospital management requires additional care and some adaptations because of the specificity of service delivery related to health promotion and patient well-being" and this will inevitably cause managerial implications in the management model due to the deployment of new technologies.

Among the managerial implications, one can highlight those pointed out by Shaw (2003), regarding the need for knowledge about the costing of operational activities, and those pointed out by SOUZA et al (2009), regarding the need to elaborate a set of indicators to assess organizational performance.

Schiesari and Kisil (2003) point out that "the performance evaluation of hospitals in Brazil was started from the definition of the Hospital Accreditation process", and "the complex organizational structure and the specificity of the services provided make it difficult the management and control of activities "(SOUZA et al, 2009), however, the use of hospital indicators contributes to a more efficient decision-making.

It is important to highlight that, although in some cases the implications were analyzed only from a cost perspective, the process of technological evolution and the perception of value by the customer triggered the need to carry out this evaluation from a quality point of view and outcomes of care. (VAGNONI and OPPI, (2015).

One of the main impacts observed when the implantation of new technologies in hospital environments occurs on its human capital, which is composed by its team of health professionals. Human capital or intellectual capital consists of the expertise or knowledge that the employees possess, constituting the most valuable intangible asset of any organization (Vagnonon and OPPI, 2015).

It is through human capital that the hospital is able to create value and seek customer satisfaction through the delivery of the best results, therefore, human capital is perceived as the main resource (BONTIS, 1998) within a hospital environment and, In this way, knowing how to manage the impacts of innovations with the team constitutes a great challenge for hospital managers and a great source of competitive advantage, since, according to Aires et al. (2017), "the true competitive advantage lies in the capacity and speed the learning of people in organizations.

3.3 Industry 4.0 and new technologies for the health sector

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The term industry 4.0 emerged in the year 2011 in Germany and, since its inception, has aroused research interest in several fields of knowledge, where several researchers such as: HERMANN. M, PENTEK. T, OTTO. B, (2016), SCHIN et al (2018), and THAMES. L, SCHAEFER. (2016) have presented concepts for the term industry 4.0.

Schin et al. (2018), for example, states that "Industry 4.0 refers to a strategy of German industries to deal with social, technological, economic, ecological and political change using Information and Communication Technology) actively. "

Among the characteristics of Industry 4.0 it is possible to highlight the ones pointed out by Roblek et al (2016): process digitalization and the use of (TIC) and those presented by Schmidt et al (2015): the promotion of disruptive innovations in processes, business and supply chain.

Although the term industry 4.0 is used more often in the manufacturing sector, Arcidiacono and Pieroni (2018) argue that the impact of industry 4.0 generates change and causes impacts in various sectors of the economy, from manufacturing to the health services sector, and its innovations occur mainly due to the implementation of new technologies that facilitate processes and generate value throughout the product, process or service life cycle.

The process of technological evolution that culminated in the development of the concepts of industry 4.0 has generated benefits in various sectors of the economy and the health sector has also benefited from the impacts of this revolution. Among the concepts widely explored in current literature is the concept of the Internet of Things associated with the health sector - H-IoT (MITTELSTADT, 2017).

The insertion of portable devices and health care software allows monitoring to be carried out continuously and constitutes a new landscape of technologies that are emerging in the health market, promoting innovative convergence (SREEKANTH and NITHA, 2016).

The great challenge of this scenario is to manage this innovative process, in order to seek to extract the greatest benefits and convert these technological advances to gain competitiveness, quality and productivity. The management implications of this new scenario constitute a great challenge for the development of a management model based on the valorization of intellectual capital and knowledge management.

3.4 Dynamic Capabilities

The need to try to explain how one company can perform better than the other in the same market promoted a change in the focus of the study on the essential competences, prioritizing the internal analysis in relation to the external one, pointing out that the source of competitive advantage is found in the skills within the company. Key competencies are "collective learning in organizations, especially how to coordinate various production skills and integrate multiple streams of technology" (PRAHALAD & HAMEL, 1990).

In order to survive and stand out in an environment of constant change, companies must seek to develop their capacity to create, understand and modify the way they have to survive, so-called dynamic capacities (HELFAT et al., 2007). The theoretical underpinnings of dynamic capabilities derive from the difficulty of understanding how a company performs better than another in an environment of constant change.

In the literature on the subject there is still no consensus on the term dynamic capacities, since scholars in the area conceptualize the term emphasizing specific aspects of them. Thus, some definitions about the term dynamic capacities will be presented below.

Teece, Pisano, and Shuen (1997) define dynamic capabilities as the "firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments." In this way, these capabilities portray the ability of companies to achieve new and innovative forms of competitive advantage.

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What distinguishes companies from each other are their competencies / capabilities, which represent a set of routines and organizational processes performed through their assets. These skills correspond to the way they organize and do things in ways that can not be done by market mechanisms.
The internal properties of companies need to be understood in terms of organizational structures and through managerial processes that support the productive activity of companies.
Dynamic capabilities are characterized as unique processes that arise within companies. Eisenhardt and Martin (2000) point out that the functionality of the capabilities can be duplicated in several companies. This happens because the processes that constitute the dynamic capacities are capable of decoding and replication and, consequently, of imitation. In this sense, the value of the dynamic capacities to obtain competitive advantage lies in the configurations of resources that they create and not in their own capacities.
The approach of Eisenhardt and Martin (2000) diverges from the approach of Teece, Pisano and Shuen (1997), since they argue that firms can develop their capacities from various points of departure and along different paths, dynamic capacities alone do not constitute a source of sustained competitive advantage.
Zollo and Winter (2002) defend the position that dynamic capacities are derived from learning and constitute the company's systematic mechanisms to modify operational routines, stating that its mechanisms are: accumulation of experiences, articulation of knowledge and codification of knowledge. For the authors, dynamic capabilities "is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operational routines in the search for improved effectiveness" (Zollo, Winter 2002).
This definition presents the concept of dynamic capacities differentiating it from operational capacity, which consists in the realization of routines capable of producing the results, goods or services of the company. Dynamic capabilities, in turn, are composed of a set of routines capable of creating organizational changes, establishing a pattern that can be used repeatedly, reliably.
One of the main managerial implications of the introduction of new technologies in hospital environments is the perception about the importance of using a model based on dynamic capabilities, so that the company can be able to learn through its own experiences and the participation of the team, proposing a management model that can be used in companies providing health services, in order to generate competitive advantage.

4 RESULTS AND DISCUSSIONS

After the analysis of the articles found in the database, of the 107 articles evaluated, 100 were eliminated because they were not aligned with the researched topic, which required the adoption of the "snowball" strategy to search for new findings that could contribute for the implementation of this Article. In this stage 30 additional articles were added and, as a final result, 37 articles were used for this systematic literature review. Figure 02, below, depicts the phases of this stage:
As the main results, it was possible to identify the authors that publish the most on the subject, especially Wu, and which are the most cited, with Breidbach, Liu, Zhang and Wu standing out (Table 01). It was also identified the countries that publish the most on the topic, highlighting the United States, China and Italy (Table 02) and which are the main keywords used in the researched articles (Table 03).
When analyzing the geographical distribution of publications, it is clear that the greatest contribution in quantitative terms comes from the European continent and the Asian continent, although, when analyzing in isolation the amount of production, the greatest number of productions is in the States United States, which is followed by China and Italy, as shown in Figure 3.
Based on the results of a systematic review of the literature, five well-defined clusters were found, which are relevant to research on the theme (Figure 4), which allows us to identify the alignments and

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connections between the themes studied by the research countries . The larger cycles represent the countries with the most expression in the research, according to figure 4 below:
The analysis of the findings also allowed us to identify the clusters of the main authors (Figure 5), which allows us to present the interrelation of these researchers in order to identify possible alignments of the research line. In this sense, those authors who publish the most are represented by the larger cycles, standing out Wu, with 4 publications and 31 citations, according to figure 5:
Once the main publications and authors were identified, it was possible to identify the main keywords that appear in these articles (Figure 6). Identifying these keywords helps to facilitate the conduct of future research through the signaling of trends or gaps.
The analysis made it possible to identify the existence of some well defined clusters, highlighting the cluster lilás, with special emphasis for the keyword "innovation", the green cluster, highlighting the keywords "new product development" and " information technology "and the red cluster, highlighting the keyword" Managerial Implications ".
In this aspect, it is important to highlight that, among the main keywords found, it was possible to observe the "managerial implications" and "innovation", words that are perfectly aligned with the research object of this article, highlighting the contribution of the findings to the the present study.
After the analysis of the findings, the selected articles were downloaded and read in their entirety to identify the possible contributions of each one with the approach of the topic to be explored. The list of articles that served as a basis for the systematic literature review process is presented in Table 04 below:

5 CONCLUSION

The main findings of this systematic review of the literature allowed us to identify that the largest number of publications related to the topic is carried out by the United States, with Italy and China with a great diversity of publications.
As a final result, the contributions of Nyle'ne Holmstro¨m (2015) stand out, stating that "companies need dynamic tools to sustain themselves in the management of the new types of digital innovation processes that arise" and that "the digital innovation requires companies to develop new skills without, however, giving up existing skills or making them obsolete "
Vagnoni and Oppi, (2015) emphasize the importance of carrying out an evaluation from the point of view of quality and the results of care as a way to improve the customer's perception of value. "The introduction of new technologies in hospital environments" generates large impacts on human capital and that human capital or intellectual capital "constitutes the most valuable intangible asset of any organization."
Wu (2014) points out that the direction that should be given when conducting research in the area of innovation in services is: Strategic Management of Innovation and Customer Loyalty.
Using the broader search of the research through the snowball strategy, the contributions of Shaw (2003) and Souza et al (2009) stand out, when discussing the importance of cost management of operational activities and management of indicators as a way of assessing organizational performance.
Another highlight should be attributed to the contributions of Teece, Pisano and Shuen (1997), by defining dynamic capabilities as the "ability of the firm to integrate, build and reconfigure internal and external skills to address rapidly changing environments" and approaches to Prahalad and Hamel (1990), emphasizing the need to "coordinate various production skills and integrate multiple streams of technology."
In view of the above, the accomplishment of this systematic review of the literature reached its objectives to seek to identify the managerial impacts of the implantation of innovations in hospital environments by showing that these impacts happen in all sectors of a hospital, from the cost sector, passing process management, human capital management, management of performance indicators,

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strategic management, innovation management and the management of how the company seizes in this new scenario (dynamic capabilities), generating implications that need to be managed to obtain the best results.

Therefore, it is necessary to carry out future researches in order to develop a methodology for evaluating the impacts of the implantation of new technologies in hospital environments, as a way to contribute to the process of measuring results.

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TABLES AND FIGURES:

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Figure 01: Dimensions of the hospital area
Source: (Brazil, 2011)

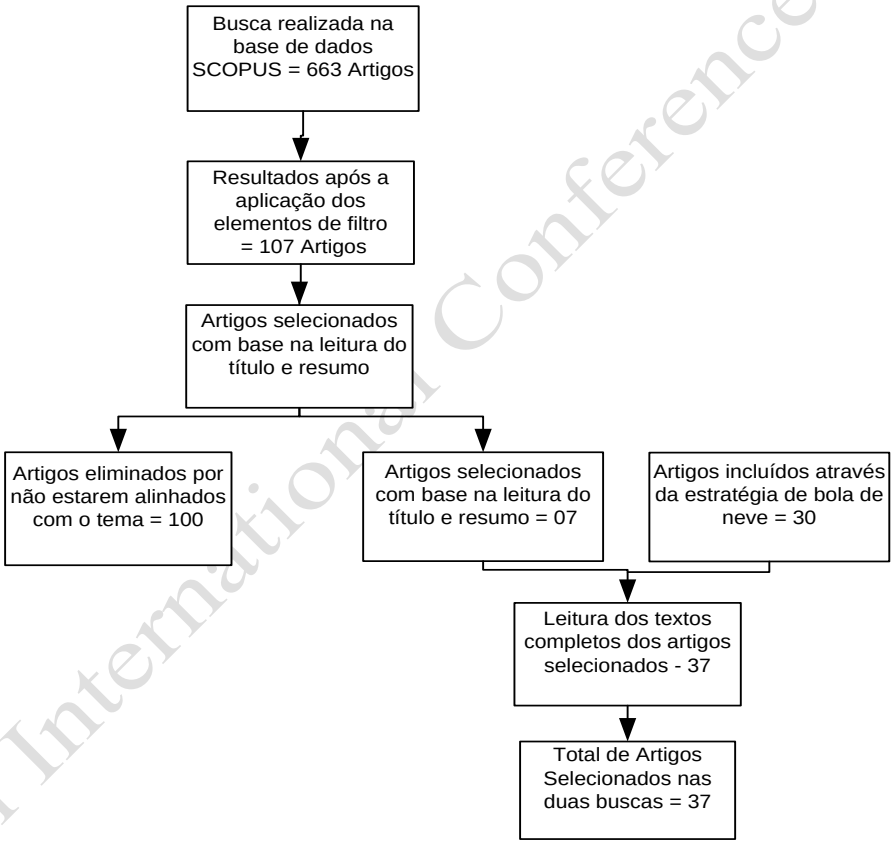

Figure 2: Phases of systematic literature review: research, steps and results.
Source: Prepared by the Author (2018)

Author	Articles	Citations
Wu w.	4	31

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Breidbach c.f.	2	58
De Carvalho m.m.	2	22
Leclercq-vandelannoitte a.	2	4
Liu y.	2	48
Wang t.	2	3
Yu b.	2	5
Zhang y.	2	48

Table 01 Main authors

Source: Prepared by the Author (2018)

Countries	**Author**	**Citations**
United States	25	105
China	12	75
Italy	12	73
Taiwan	9	61
United Kingdom	9	35
Sweden	8	139
India	5	6
Netherlands	5	39
New Zealand	5	71
South Korea	5	28
Spain	5	28

Table 2 Main Countries Researchers

Source: Prepared by the Author (2018)

Key words	**Occurrences**
Innovation	15
Managerial implications	9
New product development	9

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Information technology	7
Managers	5
Open innovation	5
Performance	5

Table 03: Key Keywords used

Source: Prepared by the Author (2018)

Figure 03: Geographical distribution of research countries

Source: Prepared by the Author (2018)

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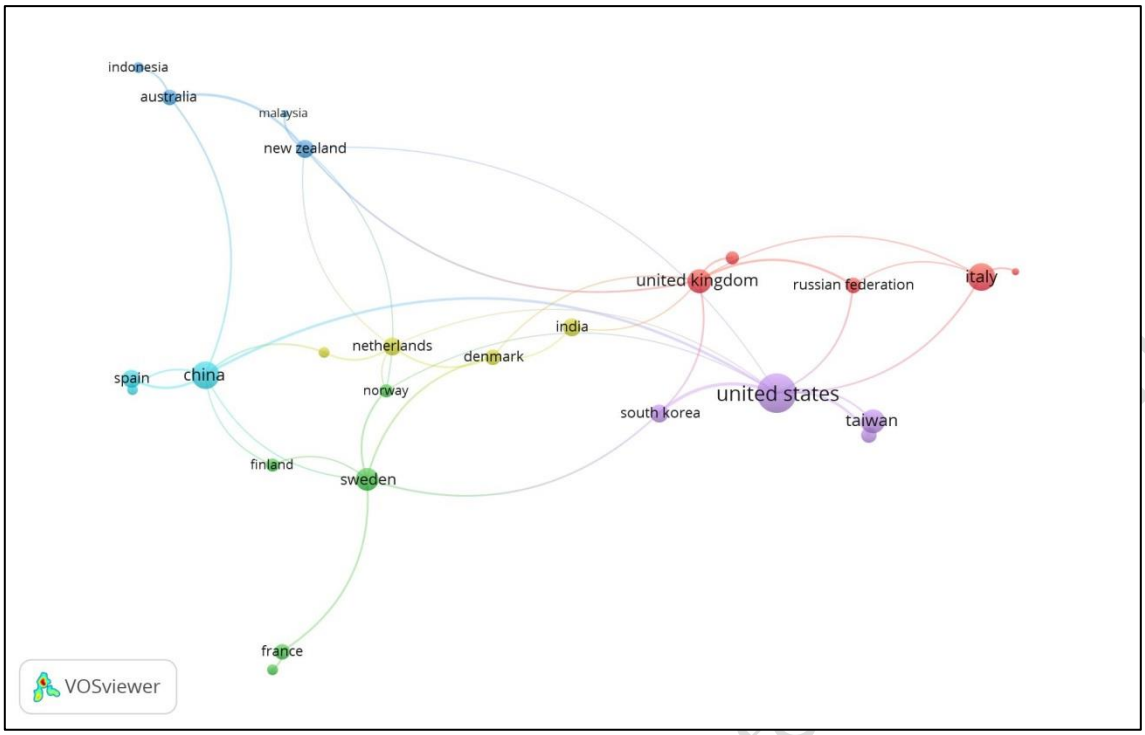

Figure 04: Clusters of countries that research on the topic

Source: Prepared by the Authors (2018)

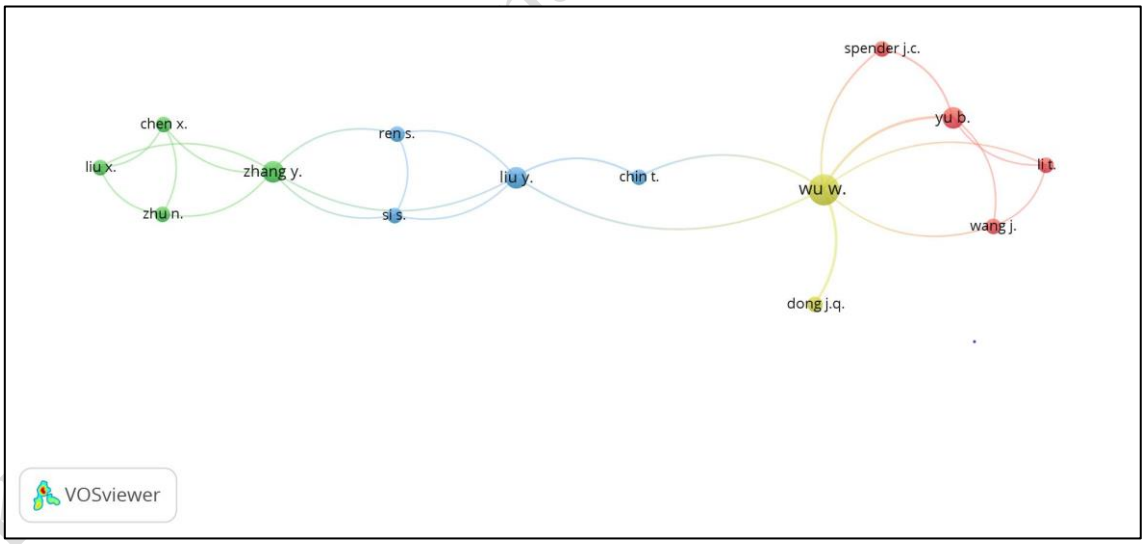

Figure 05: Clusters of the main authors

Source: Prepared by the Author (2018)

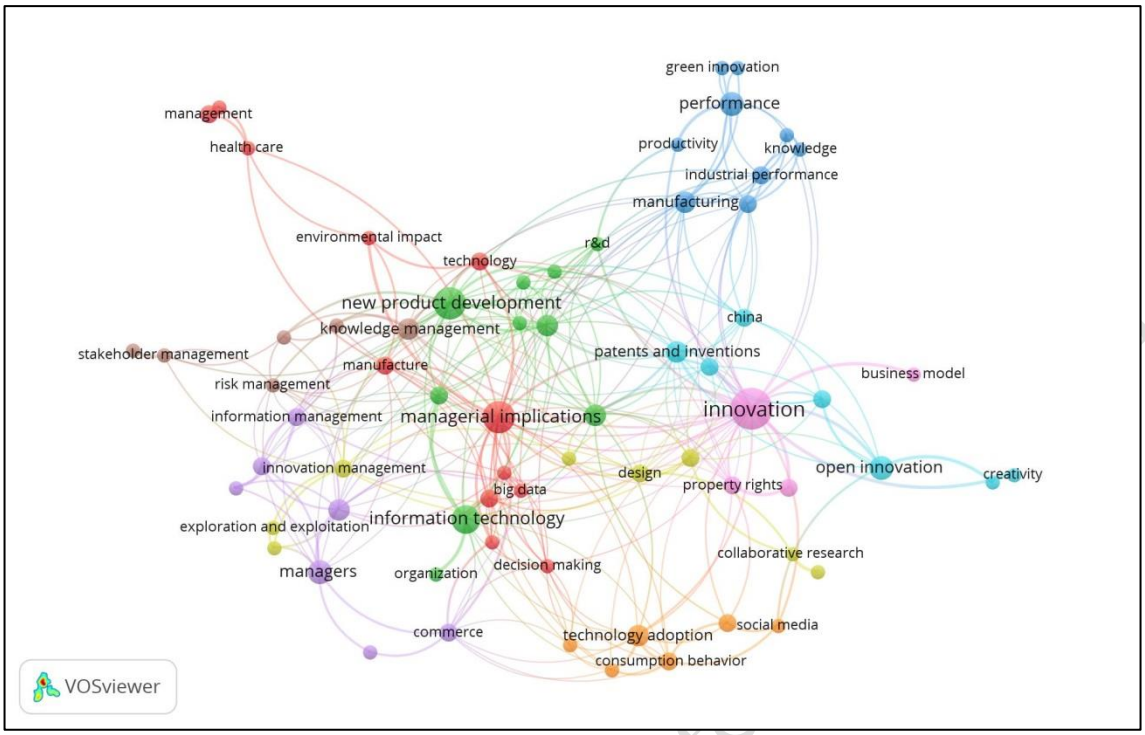

Figure 06: Keyword clusters

Source: Prepared by the Author (2018)

Can innovation be measured? A framework of how measurement of innovation engages attention in firms	Anna Brattström,∗,1, Johan Frishammarb,1, Anders Richtnérc,1, Dane Pfluegerd	Journal of Engineering and Technology Management	2018
The effect of technology management capability on new product development in China's serviceoriented manufacturing firms: a social capital perspective	Weiwei Wu, Yexin Liu & Tachia Chin	Asia Pacific Business Review	2018
Strategy orientation, product innovativeness, and new product performance	TSUNG-CHI LIU, AND YI-JEN CHEN	Journal of Management & Organization,	2015

Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation	Daniel Nyle´n *, Jonny Holmstro¨m	Business Horizons (2015) 58, 57—67	2015
Crowdsourcing, innovation and firm performance	Yejun Xu, D. Enrique Ribeiro-Soriano, J. Gonzalez-Garcia,	Management Decision	2015
The study of service innovation for digiservice on loyalty	Chih-Wen Wu∗	Journal of Business Research 67	2014
Investigating factors of intellectual capital to enhance chievement of strategic goals in a university hospital setting	Emidia Vagnoni, Chiara Oppi,	Journal of Intellectual Capital, Vol. 16 Issue: 2, pp.331-363,	2015

Table 4: Articles Used in Systematic Literature Review.
Source: Prepared by the Author (2018)

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AWARENESS OF THE FRONT OFFICE TEAM RELATED TO THE ORGANIZATIONAL GUIDELINES OF A SERVICE COMPANY

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Abstract
This study examined the level of knowledge of a front office team, working in the client's industrial unit, regarding the organizational guidelines of the service provider company, which they represent. The research was carried out under a qualitative, descriptive approach, in order to answer the following research question: does the team that works directly with the client know the mission, vision and values of the company of origin? Data collection was done through semi-structured interviews, taking into account a team of 15 employees, and utilizing a documentary research. The results showed that more than 45% of employees are unaware of the mission and values of the company and only 26% are aware of their vision. The result makes it explicit the need for internal marketing and internal communication actions to promote an alignment between the company's objectives and the behavioral practices of employees.
Keywords: internal marketing; Strategy; Mission; Values; Vision

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1 Introduction

Organizations are, on a recurring basis, exposed to an extremely competitive environment, which leads the management body to pursue all kinds of competitive advantage. A good management does not only rely on the quality of the product or service it has to offer; but also on strategic planning practices to ensure long-term benefits. Thus, a high performance company demands multiple strategic and marketing actions, geared not only to the market, but also to the internal public of the organization (Pio, 2017).

Initially, the focus of marketing was geared toward promoting the products and relationships of organizations with their external customers. In the late 1970s and early 1980s, however, the concept of internal marketing emerged in the United States, with approaches related to improving the quality of services provided by employees and as a vehicle for implementing organizational strategies (Hemais et al., 2013). Strategic objectives need to be communicated effectively so that the entire organization is engaged in its reach (Andrade, 2012).

In this context, organizational guidelines known as the organization's mission, vision and values as a foundational part of its strategic planning need to be disseminated and internalized by all employees. The mission of a company is the purpose of its existence and provides employees with a unique sense of purpose, direction and opportunity. As Peter Drucker apud Andrade (2012, 24) states, "a company is not defined by its name, status or product that it does; it is defined by its mission. Only a clear definition of the mission is the organization's raison d'être and makes the company's goals possible and realistic".

The present study examined the degree of knowledge of these guidelines at Empresa LCD Serviços, located in the metropolitan area of Belo Horizonte, providing administrative services to a group of industrial companies. The study is justified by the fact that the company maintains front office work teams in the industrial units of its clients in direct contact with them. In this way, the role of the employees of this service organization is a prime strategic factor of their success since these employees interact directly with the external clients, transmitting the company's first image. It is necessary that the guidelines of the LCD Services Company are clear for these employees, enabling the goals more directly related to the organization's business to be achieved.

The article is structured in six sections, beginning with this introduction; the theoretical framework that synthesizes guiding concepts of research; methodological procedures; the results found; the study recommendations and the final considerations.

2 Theoretical Frameworks

This section presents the theoretical conceptual basis upon which the analysis of the degree of knowledge of the front office team of the company utilized as analysis unit was made.

2.1 Organizational Guidelines: Mission, Vision and Values

Mintzberg et al., (2010) emphasized the importance of the "look inside" as a mainstay for the definition of an organizational strategy. Nevertheless, such a position was disdained by most companies. The need to develop a competitive advantage to obtain a favorable position in the market is, of course, a consensus among companies. However, it should be pointed out that this position can only be achieved and preserved if all members of the organization are able to acquire a common way of thinking and doing, in line with the medium and long term objectives of the organization (Mintzberg et al., 2010).

For the business perspective to be clear to all members of the organization, it is important not only to make it a way of doing things; it must be verbalized in terms of the organization's raison d'être, the place where the company intends to be in the future, and the moral standards considered primordial in this journey. Therefore, an essential part of any organization's strategic planning is the definition of the

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organizational mission, the business vision and the values adopted by its members (Fischmann & Almeida, 2007).

2.1.1 Mission

According to Rezende (2008, p. 42), the mission "is the differentiated description of the business or activity of the organization. It is related to the purpose, function, purpose, task, task or office of the organization". Andrade (2012) also defines mission as being the reason of existence of the company, a statement of the purposes and responsibilities to its clients. Basically the mission contemplates why the company exists, what is done and for whom is done (Andrade, 2012).

For Maximiano (2011, p. 64) the mission is a starting point from which the organization seeks to answer a series of questions about itself:

> To define the mission, or value proposition, one must ask: what is our business for? What is our use to customers? What needs are we meeting? What benefits do we have to offer consumers through our products? What problem does our company solve for its customers? What responsibilities are we fulfilling in society? (Maximiano, 2011, p. 64).

As an example, the mining company Vale's mission is expressed in the phrase transforming natural resources into prosperity and sustainable development (Vale, 2018).

2.1.2 Vision

Once defined the role of the organization, its social function, strategic planning should also establish a business vision for the company. The vision enunciates the future desired by the company, containing the aspirations and inspirations to be achieved (Andrade, 2012).

Rezende (2008, p. 43) defines vision as "the description of the setting or dream of the organization. It is related to the projection of future opportunities of the organization, questioning where it wants to reach and how it wants to be perceived or recognized". Vision makes the organization look ahead, pursue goals, set goals, bring focus on strategy planning and a common horizon under which all members of the organization work. It must establish a strategic challenge, leading the organization to behave creatively, innovatively, and entrepreneurially (Rezende, 2008).

Using the same example of the mining company Vale, its vision is "To be the number one global natural resources company in creating long-term value, with excellence, passion for people and for the planet" (Vale, 2018).

2.1.3 Values

Values correspond to what the organization believes and seeks to practice. They are organizational principles to which value and respect are attached and can be expressed through ethical convictions and beliefs. These principles will guide the behaviors, attitudes, and decisions of people who, in the exercise of their responsibilities and in pursuit of their goals, are executing the organizational mission toward their vision (Andrade, 2012). For Rezende (2008), the values must be expressed by means of intelligible items that can be experienced by every organization:

> Such items that relate proactive attitudes, philosophies, codes of conduct, creeds, and behaviors also refer to the ethical, moral, creative, and productive actions of people in organizations that can effectively contribute to their decision-making processes and consequently to their organizational intelligence (Rezende, 2008, p 45).

Organizational values must find resonance in the personal values of the members of the organization, guiding behaviors, reconciling collective and individual attitudes in the organizational environment,

giving the company a social identity that distinguishes it from others (Oliveira & Tamayo, 2004).
Using once more the example of the mining company Vale, the following values are available: Life in the first place; to value who does our company; Caring for our planet; Act Correctly; Grow and evolve together; Make it happen (Vale, 2018).

2.2 Internal communication

The industrial perspective of the machine-organization, which transforms inputs into outputs and whose constituent parts are linked only by the sequence of stages of the production process, is still quite recurrent. In many companies, departments work in isolation, without understanding the common objectives that should integrate them into a single mission and without realizing the need for dialogue to find solutions to the problems of the organization. The sense of "organization" is only physical, mechanical, without constituting a cooperative collective (Morgan, 2009).
In order to understand the importance of communication within the organization, one should replace the image of the machine - organization by the image of a living organism. The organism has interrelated needs and, to survive, all parties must work together. In the same way, the organization is a set of systems not only technical, but also social, whose phenomena are complex and occur in a tangle of relations between individuals and groups (Morgan, 2009).
Thus, communication within an organization, that is, the exchange of information between employees and bosses, departments and all levels of the organization, receives a lot of attention in current studies of the administrative sciences (Silva, 2010). According to Araujo et al., (2012, p. 48), communication is the means by which an idea becomes common and, if done with quality, "facilitates the achievement of the company's objectives, solves problems, avoids conflicts, creates interactions organizational, both horizontal and vertical", through the exchange of information. Lack of communication or misalignment can compromise the organization's survival (another organic concept), especially if the receiver and the sender involved in the process have different purposes.
Kunsch (2003) emphasizes the importance of the internal communication of the organization as a means of spreading the established global policies, the strategies outlined by the high management and the actions to be executed. The internal communication of an organization must be planned and strategically thought because it is determinant of the effectiveness and efficiency of the established strategic plan (Kunsch, 2003).
Almeida and Bertucci (2010) consider that the stakeholders must be the constant communication target of the organization, since they play a fundamental role in the perception of their reputation. In addition, those who make decisions in the organization or who suffer from their consequences need to be endowed with information that generates trust, motivation and engagement of individuals. Therefore, "it becomes fundamental for organizations to develop strategies to deal with each of the challenges that are established in relations with stakeholders" (Almeida & Bertucci, 2010, p 203).
Pio (2017), in advocating the quality of communication as a transformative force in the organization, emphasizes poor communication in a company as the cause of organizational island formation: "Negligent or clumsy communication triggers its perverse effects on the organization, reduces its performance (sometimes dramatically), creates islands equal to that thought by Luiz Groff and, if never corrected, can even create an entire archipelago" (Pio 2017, p. 32).

2.3 Internal marketing

The role of leadership is critical to ensuring the engagement and focus of the entire workforce on the company's mission, vision and values. However, this is not a simple task since promoting interaction among employees, regardless of departmental boundaries, is quite challenging. Notwithstanding, results generated by a team that "buys the idea" before selling it can be rewarding for any organization (Brum, 2017).

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In this sense, internal marketing acts with the objective of making the content of the strategy more important than its form, to create an internal positioning of the brand favorable to its competitiveness (Brum, 2017). For Brum (1998) and Grönroos (1995), the internal marketing seeks to ensure that all employees understand and experience the business, since these are the first market (or customer) to which the organization itself must orient. In particular terms, to be customer-focused, the employee must first become a customer. According to Bekin (1995, p. 2), "internal marketing consists of marketing actions aimed at the internal public of the company, in order to promote among its employees and departments values intended to serve the client".

Levitt (1960) pointed out the importance of a systemic view of organization, in which the members should act organically integrated for the sake of customer satisfaction, denouncing the short business vision of the high summit of many companies:

> Management should not judge that its task is to manufacture products, but rather to provide customer satisfaction. You have to propagate this idea (and everything it means and requires) throughout the organization. One must do this without stopping, with desire, in order to excite and stimulate the people who are in it. Otherwise, the company will be no more than a series of compartments without a strong sense of purpose and direction (Levitt, 1960, p.11).

Fernandes et al., (2011) created a framework that synthesizes the main objectives of the internal marketing from a review of the main authors that deal with the theme. The six objectives were: empowerment, motivation, commitment, involvement, valorization and satisfaction, as presented in Table 1.

Table 1 - Main objectives of internal marketing

Objectives	Meaning
Empowerment	Provide autonomy, training, information, support and necessary rewards
Motivation	Enchantment of employees.
Commitment/ Involvement	Individual behaviors of people in convergence with the objectives in the organization; tuning and synchronization of employees in the implementation and operation of actions. Integration of employees, acceptance of organizational culture - values, rites, myths and behavioral models
Valuation	Obtaining or rescuing employee awareness, highlighting the relevance of their support and collaboration for the success of organizational change. Make the employee feel important, treating him in a dignified, respectful, considerate and admired manner.
Satisfaction	asure at work, feeling of duty fulfilled, deserving of earned salary and exceeding expectations.

Source: adapted by the authors from Fernandes et al., (2011).

For Bekin (2004), employee's commitment to the company occurs only when they share their vision and see the growth of the organization as their own growth. When the employee is satisfied, there are greater chances that the external customer will also be satisfied (Bekin, 2004). According to Grönroos (1995), a service will only be provided effectively when people understand the idea contained in it. In short, the internal marketing "is a process to tailor the company to a market oriented to the customer. In this way, the relationship between the company and the market becomes a service made by internal customers to external customers (Bekin, 1995, p.35).

Grönroos (1995) emphasizes the fact that communication takes on the responsibility of disseminating the company's objectives, plans and business vision as one of the greatest contributions of internal marketing. Bekin (2004) also believes that communication and information sharing promoted by internal

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marketing lead employees to job satisfaction, once they promote the willingness of participation and exchanges between managers and employees that increase the productivity of individuals.

3 Methodological procedures

To reach the proposed objective, a qualitative research was carried out... The research is descriptive once considered the "purpose of collecting information and describing the behavior of a given phenomenon" (Collis & Hussey, 2005, p. 24). The method used was that of a case study which, according to Yin (2001, p. 32), "is an empirical investigation of a contemporary phenomenon within its real life context, especially when the boundary between phenomenon and context is not clearly defined".

LCD Services (fictitious name) is located in the metropolitan area of Belo Horizonte and provides administrative services to a group of industrial companies. The company maintains front office teams working in the industrial units of its clients, for the provision of services in loco. Therefore, the unit of analysis of this research was directed to one of these teams. The observation unit was composed of fifteen (15) employees, out of a total of twenty-four (24), who perform activities ranging from document typing to team management. Therefore, interviews included people at different hierarchical levels within the team.

The data collection was performed in two phases. Firstly, the primary data were collected through semi-structured interviews. These interviews were conducted in the same workplace and lasted around 25 minutes each. Initially a contact with the interviewee was established and the purpose of the research and the object to be analyzed were informed. It was also emphasized the need of the collaboration of each one of the interviewees for the sake of good progress of the research. The choice of the employees to be interviewed occurred in a random manner, respecting the diversity of company time and hierarchical level.

The interview script consisted of questions previously elaborated and arranged in a questionnaire (Vieira, 2009), according to Table 2.

Table 2 - Semi structured interview script.

Nº	Questions	Type	Alternatives
Q.1	What is your business time?	Objective	Up to 2 years; from 2.1 to 4 years; from 4.1 to 6 years; from 6.1 to 10 years; from 10.1 to 15 years; over 15.1 years
Q.2	Do you know what a company's Mission, Vision and Values are?	Objective	Yes / No
Q.3	Do you know the Mission, Vision and Values of your company?	Objective	Yes / No
Q.4	Does the company maintains a communication channel where Mission, Vision and Values are accessible?	Objective	Yes / No
Q.5	hat is the mission of your company?	Subjective	Subjective Free filling
Q.6	hat is the Vision of your company?	Subjective	Subjective Free filling
Q.7	hat are the Values of your company?	Subjective	Subjective Free filling

Source: prepared by the authors.

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As the interview took place, the answers were recorded by the respondent himself directly on the form that was given to him at the beginning of the process. This procedure is in accordance with one of the basic premises of the method that is the recording of the answers with the words emanating from the interviewee. The purpose of the semi structured interview technique was to provide the interviewer with a better understanding and capture of the interviewees' perception of the object investigated.
A second procedure consisted of the collection of secondary data related to the mission, vision and official values of the Company LCD Services, using the company's intranet.
The analysis procedure was based on the technique of content analysis of the data collected in the interviews, having as a reference guide the mission, vision and official values of the company. This technique is justified by allowing the analysis of contents from several sources, verbal or non-verbal, and passing throughout the range that goes from the objectivity towards the subjectivity, characteristics of qualitative research (Silva & Fossá, 2013).
According to Bardin (1977, p. 42), the content analysis appears as "a set of techniques of analysis of the communications aiming to obtain ... indicators that allow the inference of knowledge regarding the conditions of production / reception of these messages". This definition allows concluding that content analysis is a "research technique that works with the word, allowing, in a practical and objective way, to produce inferences of the content of communication of a text replicable to its social context" (Caregnato & Mutti, p. 682, 2006).
The content analysis of the interviews of this research was carried out in five phases, as suggested by Bardin (1977), Mattos (2010) and Silva and Fossá (2013), namely:

- **Phase 1:** recovery and organization of the material with floating reading; selection of interviews for the formation of the corpus of the research whose answers contained at least one word written in one of the three open questions of the questionnaire; preparation and coding of the transcribed material, according to the order of interviews.
- **Phase 2:** exploration of the material with validation of verbal facts and identification of the nuclear meaning of each response.
- **Phase 3:** comparing the content of the answers with the guiding concepts of the Mission, Vision and Values referenced from the researched theory (for question 2 of the questionnaire) and the Empresa LCD Serviços (for questions 5, 6 and 7 of the questionnaire).
- **Phase 4:** treatment of the data with the coding of the results found in Phase 3. This codification took place through the categorization assumptions that were elaborated by the authors for this research. These assumptions are presented in Table 3.

Table 3 - Categorization assumptions.

	Categorization assumptions
	Knows what mission, vision and values are and **knows** the mission, vision and values of the company.
	Knows what mission, vision and values are **and do not know** the mission, vision and values of the company.
	Does not know what mission, vision and values are and **do not know** the mission, vision and values of the company.
	Does not know what mission, vision and values are, and **knows** the mission, vision and values of the company.

Source: prepared by the authors.

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- **Phase 5:** data analysis. This phase allowed the assembly of a consolidation matrix to approximate similar reports and opinions among the interviewees (Table 5). This made it possible to draw inferences from the results found.

4 Analysis of results

The analyzes were carried out with the data collected through the semi-structured interview questionnaire, applied to 15 employees of the LCD Services company, out of 24 employees located in an industrial unit of its clients.

By means of Figure 1, it is possible to verify that, in the sample used, the distribution of the team is balanced between the positions related to management activities, with 53%, and the operational activities, with 47%. Regarding time in the company, it is noticed that 87% of respondents have been in the company for more than four years which is enough for an employee to become aware of its mission, vision and values.

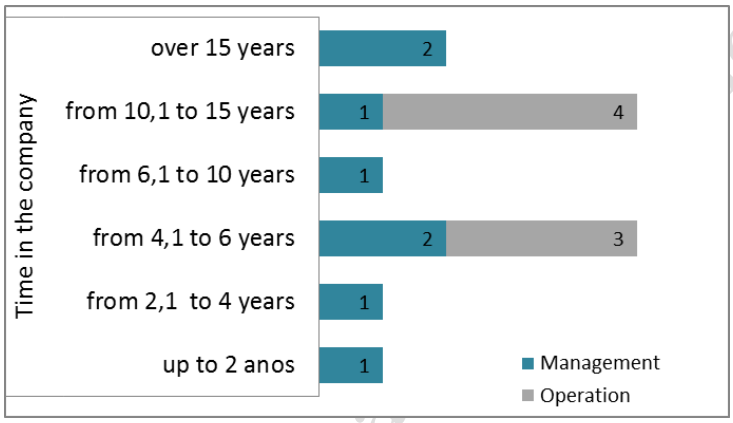

Figure 1
Position and time in service
Source: survey data.

The content analysis of the collected data was carried out obeying the five phases of operationalization of the methodology. After completing the reading of the response forms and documents collected on the company's intranet, which included the mission, vision and values of the company, the nuclear meanings of each of the responses were presented (Table 5).

Taking into account that the objective was to examine the level of knowledge of the mission, vision and values of the company by the employees of the LCD Services, the answers were compared with the guiding concepts extracted from the researched theory and the intranet survey of the company. The guiding concepts were used to evaluate the answers to questions Q.2, Q.5, Q.6 and Q.7 and are presented in Table 4.

Table 4 - Guiding concepts.

Initial category		Guiding concepts	uestions
iiding Concepts of Theory	**Mission**	It is the reason of existence of the company. It is a statement of the company's purpose and responsibilities towards its customers.	**Q.2**
	Vision	The vision statement is the description of the future desired for the company; it contains both the aspiration and the inspiration to achieve this future.	

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	Values	nciples and beliefs that define the basic rules that govern the behaviors and attitudes of all employees.	
Guiding Concepts of LCD Services	**Mission**	To support the administrative processes and activities of Customers worldwide, with the appropriate level of proficiency, efficiency and cost.	**Q.5 Q.6 Q.7**
	Visão	Our main orientation is customer satisfaction always.	
	Values	mpetence, trust, honesty, integrity, respect for others, proactive, be positive, focus on work and listen carefully.	

Source: elaborated by the authors from the researched theory and secondary data raised.

After analyzing the obtained answers, the categorization assumptions were used (Table 3), obtaining the structure presented in Table 5. With this analysis it was possible to verify the similarities of the answers with the guiding concepts (Table 4), which were highlighted in bold.

Table 5 - Similarity of responses with categorization assumptions.

Id	**For Answers**								
	Q.2	**Q.3**	**Q.4**	**Q.5**		**Q.6**		**Q.7**	
1	Yes	Yes	Yes	Provide support to accounting, financial, tax, people management, etc ... In the activities of the group's factories..	**P1**	Have the right people in the right places. Focus on customer service	**P1**	Competence, trust, honesty, integrity, respect for others, proactivity, positivity, listening carefully.	**P1**
2	Yes	Yes	Yes	Assist the group in all administrative, tax and accounting processes	**P1**	The "LCA" has as vision the growth and correct and precise care for all the responsibilities delegated to it	**P2**	The values are all aimed at compliance with rules and permissions, always following the code of conduct by the company followed	**P2**
3	Yes	Yes	Yes	Good customer service with quality and efficiency.	**P1**	Be excellent in its segment, offering better product in service for the client.	**P1**	Ethics in the work process. Respect for others and environment.	**P1**
4	Yes	Yes	Yes	Meet the expectations of the company according to the vision and values of the company, besides performing my activities in a coherent, effective and assertive manner.	**P2**	Meet the vehicle market by expanding its area of excellence with excellence for its target audience.	**P2**	Acting in the marked with quality and integrity in its products and services, aiming also the satisfaction of its collaborators.	**P2**

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5	Yes	Yes	Yes	Look for excellence in the provision of services.	**P2**	To be recognized as a benchmark of excellence in Brazil. P2 Ethics. Work through discontinuity.	**P2**	Ethics. Work through discontinuity.	**P2**
6	Yes	Yes	No	To attend to the best possible way the client, to attend the accounting, financial and fiscal processes with a level of professionalism, efficiency and honesty.	**P1**	To be among the best companies providing administrative services.	**P2**	Keep the skills, projects transparent and confident.	**P2**
7	Yes	Yes	Yes	The group carries out industrial activities in the automotive sector through companies located in 40 countries.	**P2**	I do not know.	**P2**	Integrity, seriousness, innovative capacity.	**P1**
8	Yes	Yes	Yes	Support tax, accounting, personnel, customs processes for group companies.	**P1**	Being among the best companies.	**P2**	Customer satisfaction. Ethic. Respect.	**P1**
9	Yes	Yes	Yes	Support all group companies in their administrative and financial processes.	**P1**	To be a reference for the group in the provision of group services, as well as for all other stakeholders in the group.	**P1**	The company values its services with ethics and sustainability.	**P1**
10	Yes	Yes	Yes	Meet the customer efficiently.	**P1**	I do not know.	**P2**	Ethics, professionalism, search for excellence among others.	**P1**
11	Yes	Yes	Yes	Meet the customer well.	**P2**	Conquer more customers.	**P2**	Act with integrity.	**P1**
12	Yes	No	Yes	Satisfy the customer better.	**P2**	Be a leader in your market.	**P2**	Commitment to your employees and customers.	**P2**
13	Yes	No	No	Knowledge management in order to give its stakeholders peace of mind when making decisions.	**P2**	Be reference in management and work of shared service.	**P1**	Valorization of the human being to achieve the best result.	**P2**
14	Yes	No	No	Support financial, tax, HR and foreign trade activities.	**P1**	Blank.	**P2**	Integrity, transparency, trust.	**P1**

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15	No	No	No	Blank.	**P3**	Blank.	**P3**	Attend the client.	**P3**

Source: survey data.

In addition to the content similarity analysis of questions Q.5, Q.6 and Q.7, an analysis of the respondents' answers to questions Q.2 and Q.3 was also performed, with closed answers with the yes or no response options. In Table 6 it is possible to verify the differences presented by the guiding concept of theory Vis a Vis those presented by the company.

Table 6 - Level of knowledge of the mission, vision and values of LCD Services

Assumptiions	**Mission**		**Vision**		**Values**	
P1	8	53%	4	26%	8	53%
P2	6	40%	10	67%	6	40%
P3	1	7%	1	7%	1	7%
P4	0	0%	0	0%	0	0%
	15	**100%**	**15**	**100%**	**15**	**100%**

Source: survey data.

Table 6 allows inferring that the company identity, as a set of ideas incorporated by all employees, may be compromised, considering the unit of observation used for this research. Based on the results, only 53% of the employees are aware of the concepts of mission and values and know the organizational guidelines of the company; 40% of the interviewees know the concepts, but not in the way the company adopts them; and 7% do not know the concept or the company's own guidelines.

One can thus state that almost half of the people who make up this front office team are unaware of the mission and values guidelines. These figures can be considered an alert for the need for intervention by the managers. In fact, if 47% of employees do not know the company's mission, they may not know why they are running their day-to-day activities within the customer's manufacturing unit. The data show that, possibly, these employees do not know what they are doing, why they do and to whom they should do their job with the quality desired by the organization. They have neither incorporated the principles and beliefs that should guide their behavior, attitudes, and decisions with the final customer.

As far as the organizational vision is concerned, the scenario is even more critical: only 26% of respondents are aligned with the company's future vision, knowing both the concept and its form adopted by LCD Serviços. That is, approximately 74% of the employees in the client's industrial environment are unaware of the direction in which the company defined its objectives and what it wants to be in the future. It is also noteworthy the fact that, out of 74% of respondents who do not know the company's vision, 67% have a good knowledge of the concept as whole.

Other data to be analyzed are those related to the answers given to question Q.4. This question aimed to identify whether, in the perception of the employees, the company LCD Services maintains a channel of communication where the mission, vision and values of the company are available for access of all. Such information is on the company's intranet, accessible to all employees. The result of the Q.4 responses can be seen in Figure 2.

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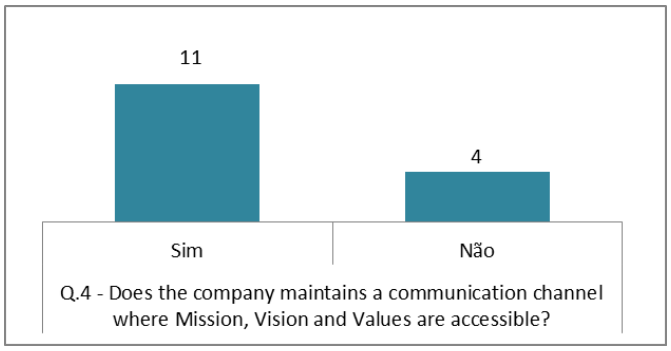

Figure 2
Perception of the position and time at the company
Source: survey data

As shown in Figure 2, 73% of employees agree that the company maintains a communication channel where mission, vision and values are available, while 27% are unaware of this channel. It is interesting to note that, among the four employees who stated that LCD Serviços does not provide this communication channel, one has a management position within the front office team. Although the information was available on the company's intranet, for some reason, a considerable portion of the employees did not find it accessible.

5 Recommendations

The recommendations made by this study aim to lead the studied organization to improve the training and the qualification of the employees that compose this team of front office and its other employees, regarding the alignment of objectives and commitment with the organizational guidelines. In this sense, the managers of LCD Services could first ascertain the level of employee satisfaction and what motivational factors may be affecting the integration of employees into the organization's business. The company may identify suitable means to encourage its employees so that their personal goals, such as career development, find opportunities in the internal environment, balancing the interests of individuals to those of the organization.

Another suggestion is to verify ways to broaden the channels for the provision of institutional information and internal communication, especially for employees who work directly with the final public. Considering that this front office team needs to represent and promote the company to the customer, it is important that each member of that team realize value in what the organization offers in terms of solution and benefits. In this sense, internal marketing actions could help strengthen the institutional image for employees.

It is also suggested to analyze the informal means of communication, informal power relations and alternative channels by which employees express their desires, needs and frustrations. The reality of a company is not necessarily expressed in its organizational chart or in the description of the activities of each position, but in social relations, culture, collective and informal modes of learning and communication.

6 Final considerations

The mission of a company is its reason for existing in the market and for society. It represents a commitment and a sense of duty. The mission must be fulfilled following the vision of the company, which, in turn, aims to make explicit how it should develop in the market outpacing its competitors. A third organizational guideline is constituted by the principles and beliefs that the organization deems ethically acceptable. The organization's identity, expressed in a clear and objective way through its organizational guidelines, allows to reconcile the diversity existing in the collective mentality and

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produces a cohesion in the performance of its members.

Obviously, organizational guidelines should not serve to impose an organizational ideology or a strong culture that ignores the fragmentation of interests, ideas, and interpretations in organizations. This risk is exposed by Mascarenhas (2009), for whom "the values and contents that compose a strong culture can serve as a kind of 'action guide', reducing the complexity of everyday phenomena as they are interpreted according to the lens 'of culture, which facilitates and accelerates decisions' (Mascarenhas, 2009: 149), but at the same time' can generate conformity and rigidity, as individuals do not feel stimulated to adopt values, concepts and priorities considered atypical or non-shared in the organization". (Mascarenhas, 2009, p.149).

Mascarenhas (2009) recognizes that the idea of heterogeneous and fragmented organizations does not necessarily produce a more creative and innovative environment, nor does it generate competitive advantages, as some theoretical lines have argued; nonetheless it raises practical controversies about which research has not yet been conclusive. Like Mintzberg et al. (2010), the author sees in organizational learning a flexibility path of the strategic alignment. The strategy can be dynamic as well as the behaviors it drives, especially in markets characterized by rapid change and constant innovation. Thus, faced with unpredictable daily challenges and issues, a broad base of certain patterns of behavior can be tested and incorporated by organizations within that context.

Notwithstanding, it should be emphasized that a learning organization also has a strategy that is not lost or floating in time (Johnson apud Mintzberg ET a., 2010). In this sense, the organizational guidelines play an important role within the organizational strategy. They balance the different components that make up the organization, reconciling them into a coherent whole. Strategy, when establishing a mission, vision and organizational values, exerts its integrative character, a holistic view of itself and the coherence of actions (Sloan apud Mintzberg et al., 2010).

This study emphasizes the need for the strategy to be not only a plan in which general guidelines are registered, but a perspective incorporated by the individuals in their ways of doing, organically permeating the different departments, promoting cohesion and meaning to the actions. Organizational guidelines may be placed in the most visible places of the organization, but if they are not accepted and incorporated into the day to day work of employees and managers and perceived as value by customers and stakeholders, they will produce few effective results.

The research contributes not only to LCD Services, but also to all companies wishing to acquire, through their organizational guidelines, a collective awareness of organizational identity as a strategic advantage over their competitors.

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IMPLEMENTATION OF MANAGEMENT MODELS: A CASE STUDY OF THE PERFORMANCE OF THE SOCIOENVIRONMENTAL MANAGEMENT AT A BRAZILIAN PUBLIC ENERGY COMPANY

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Abstract

The organizations seek to improve results and increase the competitiveness with the implementation of management models that support the improvements of the processes and the attendance to the needs of the stakeholders. The objective of this research is to contribute to the practical adoption of a management model in organizations by analyzing the impact of the performance in stakeholders related to social and environmental management. It was used a qualitative research approach that describes, through a case study, intervention and the real-life context of the impact of the implementation of the management model on organizational performance especially in relation to the stakeholder society and community. A questionnaire was sent to strategic collaborators and stakeholders and secondary data was collected. With the analysis of the research data, the conclusion is that the implementation of the management model contributed to the achievement of results and the attendance to the needs of the stakeholders. The implementation of the management model occurred in parallel with other management methodologies that also contributed to the improvement of organizational performance.

Keywords: Organizational performance; management model; stakeholders; social and environmental management.

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1 INTRODUCTION

It is noticed that what was required of the model manager to be applied 20 or 30 years ago, becomes quite different from what is currently required. Today there is a paradigmatic break in business management that considers the theory of co-evolution and evolution of biology per se that will be fundamental foundations in the life of any business, in the life of any organization and in the life of any project one wants to lead. Biological thinking borrowed here means that companies generally seek through benchmarking and governance to apply sustainable business models so that they either share or perish. This spectrum, which was only a matter of concern to private companies, has become fundamental in governmental enterprises.

Currently, public and private organizations invest in consulting, systems and people development to ensure that management models provide improved organizational performance. It seeks to increase competitiveness and ensure the sustainability and possible growth of the organization in comparison with others of the same scope, size and follow-up by means of the implementation of management models that seek the achievement of the strategic objectives. These support the improvements of the process management and the overcoming of results to meet the needs of the stakeholders. These are individuals and groups (organizations, individuals, legal entities, investors, associations, society, among others) that can influence or be influenced by the strategic results achieved and those who have claims on organizational performance. The concept of applied management model addresses strategic dimensions of the organization with the objective of meeting the needs of the stakeholders in the long term.

The qualitative methodology was used through multiple case studies to analyze how the management model can meet the expectations of stakeholders. The organization was selected due to tradition and recognition in the area of management and the continuity of socio-environmental practices, implemented more than 10 years ago. The research techniques adopted were: application of questionnaire, interview and analysis of secondary data. In this case, the searched organization will be identified as Company A.

The research problem was to answer the question: does the implementation of the management model produce significant effects on the performance of social and environmental management vis-à-vis stakeholders? The importance is the frequent attention of the organizations for the survival in the market and the search for effective social-environmental results for the stakeholders, in this case for the Society / Community. The intention is to contribute to guide the implementation of socio-environmental management in organizations and to base studies demonstrating that it is possible to implement management models in public and private companies with a view to improving socio-environmental results.

The general objective of the research was to verify if the implantation of management models in public organizations produces significant effects in the performance of the socioenvironmental management before the stakeholders. The specific objectives were:

- analyze how the performance of organizations can be improved with the implementation of management model;
- raise the benefits of implementing the management model related to the performance of social and environmental management in public companies;
- to verify the socio-environmental indicators and practices adopted vis-à-vis stakeholders.

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2 LITERATURE REVIEW

The theoretical basis presents a panorama of the performance of the stakeholders and their relationship with the organization.

2.1 Organizational performance towards stakeholders

Organizational performance is considered an important concept in the Strategic Management literature. Some authors have studied the strategy with the aim of presenting concepts and discussions about performance as Hansen and Wernerfelt (1989), McGahan and Porter (1997), Powell (1996), Rumelt (1991), Schmalensee (1985) and Wernerfelt and Montgomery (1988). In the 1980s, the idea emerged that good performance is associated with overcoming goals and meeting the interests of the different groups that relate to the organization (Cameron, 1980; Kanter & Brinkerhoff, 1981; Freeman, 1984).

The definition of performance associated with multiple stakeholder theory or stakeholder theory was introduced by Edward Freeman. In 1963, the term stakeholder appears in the management literature in an internal memo of the Stanford Research Institute. The term sought to spread the concept of stakeholder as the group to which managers must offer answers. Researchers also demonstrated that executives should understand the needs and interests of this group, since they could not formulate corporate goals without being able to assure the company's survival through involvement in values, choices, and potential risks and benefits (Freeman, 1984).

Different approaches are presented in stakeholder studies. Importance can be determined by the degree of contribution to organizational performance. According to Altkinson and Waterhouse (1997) and Shankman (1999), the organizations' goal is to meet the needs of shareholders who they consider to be the main stakeholders, and the others are important in that they contribute to increasing the organization's profit. On the other hand, other authors argue that the goal of organizations is to serve not only the interests of shareholders, but of all stakeholders (Donaldson & Preston, 1995, Freeman 1984, Metcalfe 1998, Moore 1999).

Considering the concepts of stakeholders, it is presented in Appendix A, matrix of stakeholders that are considered high priority in the management of the company being surveyed. The theory seeks to define which are the groups that are related to the company, its needs, how is the performance of the stakeholders to reach these objectives and how the management must take into account these desires in the management of the companies. The performance from this perspective proposes that the efficiency of the organizations is related to the answers to the demands and the satisfaction of the diverse stakeholders. In relation to the performance measurement approach, the better the satisfaction of the demands of the stakeholders, the greater the satisfaction and the better the performance of the company. In order to obtain performance measurement, it is necessary to identify the stakeholders and their needs to be met (Connolly, Conlon, & Deutsch, 1980; Hitt, 1988; Zammuto, 1984).

The disruptive nature of many sustainability solutions can be the main barrier to their implementation and dispersion: adopting a business model perspective can help solve this problem. The implementation of sustainable solutions often depends on projects being implemented and managed collectively, so organizations need to adapt their business models to deliver value propositions collectively, a phenomenon that research on business models for sustainability must address (Gauthier, C Gilomen, B., 2016)

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3 THEORETICAL MODEL

3.1 Management Models

The concepts of management models are presented as a way of beaconing to improve the results and competitiveness of organizations. Management should advocate for ways of acting that ensure the achievement of strategic results vis-à-vis stakeholders (Correia, 2016). According to Wilkinson and Dale (1999), it is necessary to meet the needs of customer relationships, compliance with legal requirements, regulations and historical trajectory, among other aspects, leading to the adoption of references that legitimize, even partially, the capacity management of organizations in the business environment. Shehabuddeen et al. (1999) state that in an attempt to guide decisions, managers and researchers in the management area use models, with the purpose of facilitating the understanding of the business and internal communication of the organization within a system for a defined purpose.

Pidd (1999) emphasizes that a model can be understood as an explicit and external representation of part of reality seen by people who wish to use the model in order to understand, change, manage and control that part of reality in some way.

According to Shehabuddeen et al. (1999), models are representations of real objects or situations and can be presented in various ways. Models can be categorized into three types: (1) models that do not have the same physical appearance with the modeled object, but rather an analogy; (2) models that represent physical replicas of real objects; (3) models that represent problems of a system by means of symbols or mathematical representations. The first type corresponds to the models that present an analogy to the theoretical proposition of management for the organizations and, in this article, detailing the management model adopted by Company A. Such organization is a public company that underwent structural changes becoming a company where the Government holds a majority stake.

Studies indicate that utility companies are losing profitability and threats and opportunities for solar photovoltaic power generation for utilities have been identified based on a series of interviews with Brazilian utility managers. In this sense, utilities could not benefit from solar photovoltaic as just another source of electricity in competition with traditional sources (as they are today), but as a strategic gateway to the emerging generation and distributed services market. It could act as a basis for future business model innovations in new, growing markets such as energy efficiency and distributed storage. Similarities are pointed out about the importance of creating broader environments for social innovations and business models, such as skill development, knowledge and social capital, through multi-level interventions focused on different aspects of generation, supply and use of (Richter, 2013).

There are tendencies in the organizational environment in the changes of aspects of the productive dynamics in response to the pressures and adoption of environmental management policies and in strategies to increase competitiveness. For the organizations, the concern with the environmental issue provoked changes of different natures and had the challenge of adapting to sustainability in terms of business competitiveness.

The traditional model of energy business management is under pressure and services must play an important role in the energy transition. Experts and scholars argue that utilities need to innovate their business models and turn from commodity suppliers to service providers. The transition from a product-oriented, asset-oriented, capital-driven business model towards a service-oriented, expenditure-intensive business model based on intangible assets can present major organizational challenges (Helms , 2016).

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4 EMPIRICAL SECTION

The research was predominantly descriptive, but with elements of exploratory and explanatory research. The qualitative research was adopted through a case study of the Companies through a qualitative study of Company A to describe an intervention and the real-life context of the implementation of the management model produces effects on organizational results, especially with regard to related stakeholders socio-environmental management. The case study is an empirical investigation that delves into a contemporary phenomenon within its real-life context. Its purpose is to establish a framework for discussion and debate (Yin, 2015). This study was divided in two steps to reach the objectives and facilitate the approach and the deepening in the researched subject.

The first stage was composed of sending questionnaires to detail the organizational characteristics and to collect data on the implementation of the management model. Questionnaires were sent by e-mail to professionals who worked on the implementation of the management model and continue in the area. Data on the implementation were questioned, what were the benefits to the organization, the perception of improvement in the management and in the performance of the socio-environmental management of the organization to the stakeholders.

In the second stage an organization was selected where unstructured interviews were conducted at the headquarters of the research organization and had an average duration of one hour. The central themes were related to the implementation of the management model and the impact generated. The interviews began with a brief comment about the research and the request for recording, in order to facilitate the analysis and contribute to the participation of the interviewer in the subject addressed. The methodological approach analyzed secondary data, using content analysis to extract evidence from sources such as corporate web sites, annual reports, documentary analysis of databases, and government and sustainability sources. The objective of the second stage was to deepen the answers to the questionnaire, to detail and categorize stakeholders, to seek information about them through unstructured interviews, to describe management practices related to them, and to develop strategic indicators. Secondary data were collected according to the type of stakeholder: society, government, suppliers (council minutes, regulatory agency publications, internet publications and social networks); shareholders and clients (publications of reports on the internet and social networks) and employees (unstructured interviews).

The choice of Company A was due to tradition, experience, recognition and continuity in the adoption of socio-environmental practices, implemented more than 10 years ago, for accessibility and availability in contributing to the research. Some of the awards and recognitions achieved by Company A in 2017 were: Transparency Trophy, CDP Water, Dow Jones Sustainability Index, Top 100 Green Utilities, Bovespa Corporate Sustainability Index and Efficient Carbon Index of BM & F Bovespa and BNDES.

Company A is a corporation founded in 1952 and is a public service concessionaire of the electric sector with state shareholding control. Currently, it has approximately 6,000 employees and was selected for the 19th consecutive time to compose the portfolio of the Dow Jones Sustainability Index in the period 2018/2019, remaining the only company in the Latin American electric sector to be part of the index.

The management model adopted by Company A is a systemic model adopted by numerous organizations and was built on a foundation of essential fundamentals to achieve performance excellence. It presents a strategic and systemic approach to organizational management, seeking the satisfaction of stakeholders' needs and encouraging sustainability in long-term results. This approach is explained mainly by the Fundamentals of Excellence: systemic thinking, innovation, agility, transformative leadership, customer and market knowledge, social responsibility, valuing people and culture, process orientation and value creation (Correia, 2016; FNQ, 2014).

One of the interviewees of Company A stated that the perception of the impact of the implementation of management models is different according to the stakeholder:

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> Some stakeholders are more impacted and some less. For people there was the incentive in the search for knowledge, shareholders and leadership was the direction for a unique purpose linked to excellence, for the customers improved the relationship processes, community and suppliers there was the effective implementation of practices to improve the relationship. (Interviewee of Company A)

In this article we sought to focus on the stakeholders of society / community. According to secondary research data several management practices are used to interact as detailed in Appendix B.

Company A uses in its management model the adoption of practices according to the type of stakeholder and draws up the aspects that are relevant to its action with the Community such as: access to energy, water, biodiversity, emissions and climate change, management of people, risk management, investment for growth and concessions, social investment, energy quality and customer relations.

Company A develops management practices to interact with stakeholders, society and government, consequently seeks to monitor the indicators related to its performance. We will not detail the indicators considered for Government since they are related to Markets and Shareholders and do not reflect a relationship with the management practices adopted.

In Appendix C, the indicators adopted by Company A. are illustrated. The report with information on 2018 is not yet available. In the analysis of the research data, were deployed contents related to the benefits to the organization, employee involvement, organizational changes, management role, general comments about the implementation and suggestions for improvement for organizational management.

The performance improvement theme was directed to the impact of model implementation and recognition on organizational performance that is related to the improvement of the results of the strategic indicators. Already, were detailed in relation to the impact of the results on stakeholders, the topics of improvement in performance, perception of improvement and satisfaction of stakeholders.

In general, the benefits cited were: organization and integration of processes, improvement of results, focus on stakeholders, improvement of strategic planning, quality search, improvement in sustainability, organizational learning, systemic vision, team development, improvement in service customer relationship management, employee involvement, cost reduction, optimization of resources, organization of information in the management report, strengthening of the brand, public recognition, innovation, adoption of effective management practices and improvement of comparative benchmarks .

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5 CONCLUSION

The Case Study of Company A demonstrates that it is necessary to manage the performance of stakeholders through management practices. The implementation of the management model occurred in parallel with other management methodologies such as ISO 9001, ISO 14.001 and the Balanced Scorecard (BSC), which also contributed to the improvement of organizational performance. The challenge in Public Management is the definition and monitoring through indicators of actions implemented. It is suggested that the indicators are not only related to the investments made, but related to the impacts on society. It is no use several indicators if they do not demonstrate the impact of management practices and public policies towards stakeholders by measuring the fulfillment of expectations and needs.

After the State Reform in Brazil, public management sought to be more active and efficient considering a new premise: civil society participation as an evaluator of governmental actions and companies linked to the action of the Public Power (Gespública, 2018). This paradigm shift in the governance model for governance more open to stakeholder participation in the third sector and private sectors has required that the current models be restructured in order to expand and monitor the positive outcomes of these contributions. However, as already seen, even in well-organized locations regarding the monitoring of its activities, such as Company A, it is also necessary to develop indicators that will allow gauging and optimizing even more the management model aimed at democratic and transparent governance.

In public management, stakeholders are individuals and groups that can influence or be influenced by the strategic results achieved by activities related to the State, whether strictly governmental or when it operates in the private sector. It was considered that efficiency and competitiveness have been linked for years to the most closed and results-oriented management models, but that the reform of the governance paradigm has led and required significant changes that affect the relation of the State and its partners, as well as companies acting in strategic areas of public interest in relation to their stakeholders. It is concluded that the indicators currently used to measure efficiency are no longer enough to determine the quality of socio-environmental management, since they need to be better adapted to the current scenario of collaboration between stakeholders and public managers. Therefore, in order for the measures adopted to produce qualitatively better results, management models should seek to be more resilient and open to the information that these subjects can add to the decision making process and transparency.

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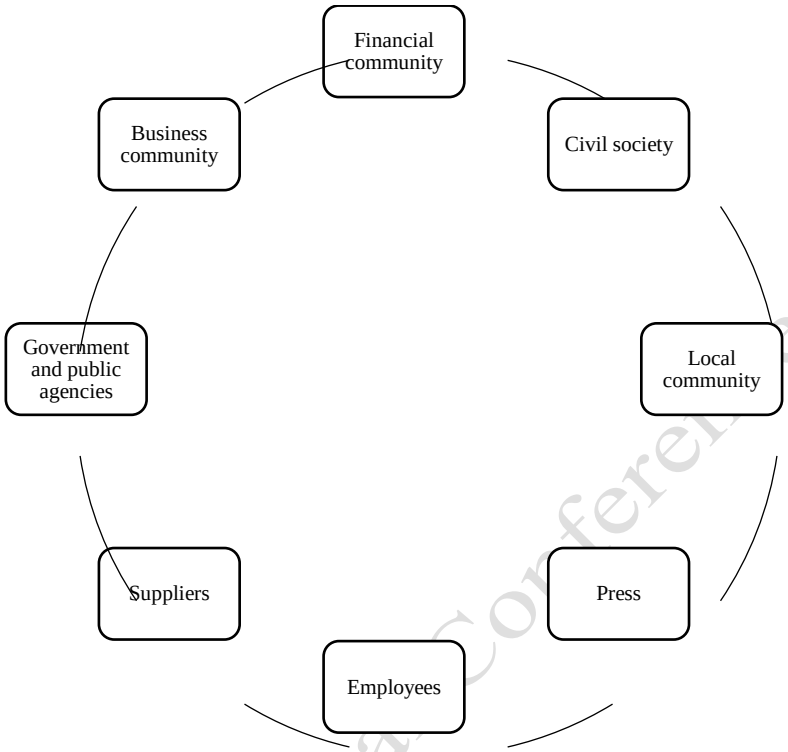
APPENDIX A

COMPANY STAKEHOLDERS MATRIX



APPENDIX B
RELATIONSHIP CHANNELS AND COMMITMENTS WITH STAKEHOLDERS

Group	Management Practices / Relationship Channels
CIVIL SOCIETY	- Committees - Annual Reports - Portal - Policies (Environmental Policy, Biodiversity, Sponsorship, Grant, etc.)
LOCAL COMMUNITIES	- Sustainability Channel - Face to Face (Proximity Program, Forums and Socio-environmental Negotiations) - Portal - Policies (eg Community Communication Policy). - External Campaign to Prevent Accidents with Population
GOVERNMENT AND PUBLIC BODIES	- Surveys (eg, Research with City Halls) - Face to Face (Agents of Relations with the Public Power, meetings and services)

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APPENDIX C
COMPANY STRATEGIC INDICATORS

Stakeholders	Indicadores	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Shareholders / Government	Net Operating Revenue (R$ million)	8.467	10.246	10.890	12.158	12.863	15.749	14.137	14.627	19.540	21.292	18.773	21.712
	Ebitda (R$ million)	3.222	4.062	4.099	4.588	4.543	5.351	5.084	5.983	6.382	4.955	2.638	3.492
	Net Income (R$ million)	1.719	1.743	1.887	2.134	2.258	2.415	4.272	3.104	3.137	2.492	334	1.001
	Note on the DJSI (Dow Jones Sustainability Index) (points)			82	84	82	78						
	Market value (R$ million)	17.017	15.803	15.761	19.595	18.220	22.694	19.292	17.629	16.812	7.843	9.773	8.455
	Value of the brand (R$ million)		890	1.340	1.297	1.503	1.277	1.429	1.439	1.662			
Employees	Accident frequency rate (own employees)	0,37	0,48	0,43	0,51	0,41	0,25	0,23	1,7	1,7	2,04	1,7	2,0
	Accident frequency rate (workforce)	1,3	0,92	0,72	0,79	0,54	0,63	0,44	0,42	0,4			
	Average hours of training per employee	59,3	50,7	71,25	72,43	75,66	43,18	35,5	69,6	49,37	37,26	20,56	35,52
	Organizational Climate Favorability Index		60		53		50						
	Note in the Indicators of Labor Practices (DJSI)				89	86	89						
	Performance Index				50,4	66,7	68,82						
Providers	Supplier Performance Index				79	79	80						
	Customer Service				70	70	72,7						

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Customers	Aneel Customer Satisfaction Index (IASC) (%)	68,03	71,63	69,68	68,14	70,25		64,51	61,98	68,75	66,71	64,04	65,75
	Equivalent interruption duration per consumer (DEC)	13,03	13,14	13,66	14,09	12,99	14,32	14,73	12,49	10,77	11,5	11,7	10,8
	Equivalent frequency of interruption per consumer unit (FEC)	6,43	6,39	6,53	6,76	6,55	7	7,03	6,26	5,58	5,87	5,64	5,44
	Perceived Quality Satisfaction Index (ISQP) (%) (Abradee)	80,6	85,7	83,3	81,43	80,52	80,55	78,86	77,6	81,3	81,03	70,1	79,2
Society	Resources invested in the environment (R$ million)	20	36,8	42,2	60,7	54,3	53,4	59,4	52,4	52,8	53,8	52,1	37,5
	Investments in R & D environment (R$ million)					0,8	2,5	6,6	10	11,7	8,5	2,9	1,1
	Total resources invested in social responsibility (R$ thousand)					77.440	75.074	115.023	83.234	109.622	75.751	57.640	128.227
	Note on the Environmental Dimension in the Dow Jones Sustainability Index (DJSI)			84	87	87	75						
	Note on Social Dimension (DJSI)				83	83	86						
	Degree of Overall Satisfaction of opinion formers				72	77	71						

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THE IMPORTANCE OF INDICATORS FOR GUIDING MULTIPLE STRATEGIES

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Abstract
This work's objective is to present and analyze indicators that guide strategic decision making at the levels of the organizational, network, corporate, business and functional environment proposed by Witt and Meyer (2010). In this sense, in addition to the mathematical expression that defines each indicator, it's been scrutinized what each of them can portray from the reality examined. Methodologically, a descriptive meta-analysis was carried out for the classification of the indicators, categorized by PESTMC-FP, through documentary research and consultation of the database referring to the values of indexes in acceptable domains that represent organizational position for evaluation of the decision maker. The paper proposes a reflection about the evaluation of the indicators as support in the processes of formulation, analysis and control of organizational strategies.

Keywords: Strategy; Organizational levels; Indicators.

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1 Introduction

Survival in a competitive environment requires that organizations have dynamic capabilities generating skills and abilities to do environmental readings and the changes to be projected. Being able to change quickly in their resources, on the structure in their various network levels, corporate, business models and functional competencies. Therefore, depending on the complexity required to achieve strategic objectives, executives must formulate and deploy multiple streams to address the various levels of management.

It is widely known that a permanent environmental reading, vis a vis the design of the positioning, attacks and expansion require competitive intelligence efforts to increase the organisation's chances. The best position of the organisation in the most complex environment, whether in the inside out and outside in focus, must be balanced by the dynamic capabilities and contribute to the direction of more effective strategic decision flows. This results in the need for measures by indicators of the conditions of the internal and external environments that affect or suggest controls on the strategic actions of the organizations.

In this context, the objective of this paper is to present different indicators that guide the strategic decision making at the levels of the organizational, network, corporate, business and functional environment, as proposed by Witt and Meyer (2010). In addition to the mathematical expression of the indicators, it was described what content each of them brings to support strategic conducts.

According to Cosenza (2016), it is worth noting that decision-making, as an ordinary process, tends to generate the same results that do not always represent the best solutions. In this sense, this research becomes timely because it presents non-routine but substantially relevant indicators that will help the executive exercise contingent strategic routes for a better decision-making process. For the presentation and understanding of the indicators, a meta descriptive analysis was carried out, through documentary research and consultation of the database referring to index values in acceptable domains.

2 Environmental analysis models

The SWOT matrix is one of the models adopted for the analysis and diagnosis of the organizational environment and is considered a classic management tool whose objective is to identify and combine the strengths, weaknesses, opportunities and threats that are present in the environment (Ceribeli et al., 2010; Almeida & Cardoso, 2014).

In this context, PEST (Policy, Economy, Social, Technological, Environmental and Legal) is a complementary tool to the SWOT matrix whose objective is to broaden the analysis of the external macro environment, allowing the identification of factors that affect, directly or indirectly, the performance in terms of macro indicators. Because it is a strategic tool, it allows an in-depth analysis of external and dynamic variables that are not controllable by organizations (Gregorié, 2014, Rastogi & Trivedi, 2016).

In addition to the SWOT analysis, the financial and process KPIs (Key Performance Indicators) are adopted as indicators to analyze the internal environment. The indicator is a performance measurement instrument being used to measure and analyze the results obtained in certain periods. Thus, indicators are essential data for the management of an organization. For this study, only the acronym PEST was used to analyze the macro environment of organizations. At the opportunity, the variables "market" and "consumer" (MC), were added to complement the analysis of the micro environment, and the variables "financial" and "process" (FP), to analyze the internal environment. Thus, the final result of the acronym of the tool adopted for analysis of external (macro and micro) and internal environments was **PEST-MC-FP** (Political, Economic, Social, Technological, Market, Consumer, Financial and Process).

3 The Multiple Strategy Observer

The strategy can be defined as a decision-making flow that generates value to the organization's target stakeholders, that produces competitive and lasting advantage and aiming at a better positioning through the implementation of the deliberate strategies and treatment of emerging strategies. Such treatment takes place through the abilities of a strategist.

Strategic management is characterized by the ability to influence its stakeholders to make decisions, voluntarily and routinely, that guarantee the company's viability in the short and long term. These managers do not have linear thoughts

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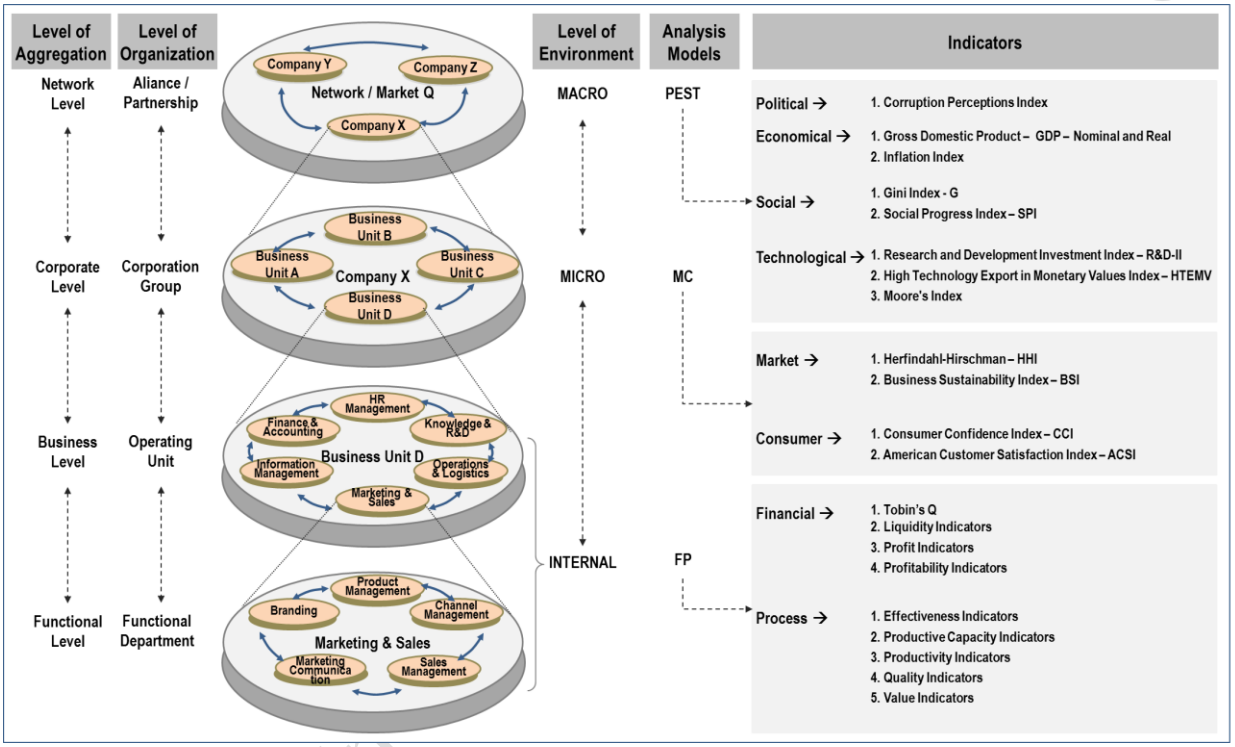
and believe that the strategy of their decisions affects the organizational environment (Rowe, 2002). In this way, the definition of the strategy must be supported by information from a solid analysis of the organizational context.
According to Wit and Meyer (2010), the organizational context consists of four levels, namely: network level, corporate level, business level and functional level. In order to develop strategies that meet the four organizational levels, it is necessary to place substantial information on these levels under the detailed examination and attention of the managers and strategic managers. This vision will allow us to formulate, implement and control specific strategies of interaction between organization and environment in a competitive way that will result in an above-average performance (Wit & Meyer, 2010).
Therefore, in Picture 1, a hierarchical view of the four corporate levels of the organization is presented, classified by level of environment and with their respective models of environmental analysis and (non-exhaustive) indicators. The data provided by the indicators will serve as strategic information for decision-making. This scenario allows a better understanding of the opportunities and threats present in the external environment and of the strengths and weaknesses existing in the internal environment.



Picture 1: Levels of organizational environment and respective indicators
Source: adapted from Wit & Meyer (2010, p.235).

It is of great relevance that the factors that impact the company's results are known and understood according to their context. In an adequate proportion and through a systematized presentation, the indicators provide consistent information for strategic decision making at the various levels of the organization (Nascimento et al., 2011).

3.1 Network Level Indicators - Macro Organizational Environment

The competitive intelligence of an organization consists of directing the "support activities to the direction with the objective of interpreting the information about elements of its external environment, so as to anticipate opportunities and threats" (Buzeiro & Marcondes, 2013, p.2). The macro environment is formed by the most varied agents that interfere, directly or indirectly, in the internal structure of the company (Oliveira et al, 2015).
Therefore, the indicators related to this macro environment are extremely significant and should be known to the organization to guide the strategy. Some of these indicators were categorized according to the analysis model of the macro environment PEST, contemplating the following external variables: Politics, Economy, Social and Technological.

3.1.1 Politics

Politics possess the potential to have a great effect on the development and competitiveness of an organization, presenting many opportunities along with many risks. In this analysis, it is essential to understand the political tendencies and the positioning of state leaders that can influence, directly or indirectly, the sector of performance of the organization. Political factors include state stability, corruption, regulatory trends; tax policy, foreign trade regulations and the development of community policies and well-being (Kolios & Read, 2013, Gregorié, 2014, Rastogi & Trivedi, 2016).

Corruption Perceptions Index : related to the Corruption Perceptions Index, there is Transparency International, which is an organization formed by members from various countries, with the mission of ending corruption and promoting transparency, accountability and integrity at all levels and sectors of society, based on values such as transparency, accountability, integrity, solidarity, courage, justice and democracy. This organization aims at a world in which the government, politics, business, civil society and daily life of people are free from corruption (Moreira, 2018).

The parameter of analysis of this index is between 0% and 100%, where 0% indicates maximum level of corruption and 100% a country without corruption. The calculation is based on 13 sources of data collected: politics and institutional evaluation, sustainable governance indicators, transformation index, country risk rate, executive and economic opinion survey, polls and democracy variables (Moreira, 2018).

3.1.2 Economy

Macroeconomics is the area that studies the relations of the economy with society and is within its perimeter the items that alter the economic situation of an environment. The main indicators of economic development include the variation of GDP, interest rates, currency in circulation, inflation and unemployment (Gregorié, 2014).

GDP - Gross Domestic Product – Nominal and Real: these are the two methods used to measure GDP change over a given period. The Nominal GDP, or at current prices, is obtained considering the inflation of the period. However, inflation can camouflage a real economic situation. Thus, real GDP allows a real-world assessment of GDP variation. Also known as GDP at constant prices, Real GDP adopts the same price as the base year for other years. The calculation of both is given by the sum of the values of final goods and services, as presented by the expressions(1) and(2).

$$PIB_{Nominal} = \sum_{i}^{n} p_t^i \, q_t^i \qquad (1) \qquad PIB_{Real} = \sum_{i}^{n} p_0^i \, q_t^i \qquad (2)$$

Being: n number of goods and final services; q_t^i transacted quantity of the good or service i in the period t; p_t^i price of good or service i in the period t; p_o^i price of good or service i in the base period.

Also important is the **Inflation Index** that affects the average price variation of several products in a given period. One of the Inflation Indexes is the *IPCA* (Extended National Consumer Price Index). This index is calculated by *IBGE* (Brazilian Institute of Geography and Statistics) and measures the price change of products and resources essential for people's daily lives, such as a purchasing power evaluation thermometer. In the calculation of the IPCA, families with income from 1 to 40 minimum wages are taken into consideration.

3.1.3 Social

The social scenario portrays the characteristics of the community in which the organization is inserted and that can directly affect its performance. Factors such as demographic aspects, income distribution, social mobility, lifestyle changes, behaviors and attitudes towards work and leisure, consumerism and educational level (Gregorié, 2014) need to be known in order to define a more effective organizational strategy. Thus, the HDI and the indexes of Gini and Social Progression can be important information.

The Gini Index (G): the Gini Index (G)[i], created by Conradi Gini, in 1912, is used to measure the level of inequality in the income distribution of a country and represents the distance between the income of the poorest and the income of the richest. The index is evaluated on a scale of 0 to 1, where 0 indicates 100% equality in the distribution of incomes from one place (all have the same income) and 1 indicates that the income is 100% concentrated in a single person (other people do not have any income). Both are ideal extremes which, as a rule, are not common (IPECE, 2007, Ende et al.,

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2010, Silva, 2016).

The cumulative distribution of the proportion of income and population is represented graphically by the Lorenz Curve. The calculation of the index is done, firstly, by creating the curve with the distribution of the incomes (in %) on the Y-axis and the cumulative amount of population (in %) on the X-axis. The union of the points of intercession of X and Y results in the Lorenz Curve. The greater the deviation of the Lorenz Curve from the hypothetical line of equality, the greater the inequality in the distribution of incomes among the members of the population. The value of the Gini Index, by definition, is a relation between the area of inequality (a) and the area of the triangle (d), with the following expression(3):

$$G = \frac{a}{0{,}5} = 2a \qquad (3)$$

Being: a area of income inequality among members of the population. The index shows the greater or lesser concentration of the produced wealth, oscillating between 0 and 1 ($0 \leq G \leq 1$). The closer to the unit the greater the concentration of wealth, while the opposite occurs when the index approaches zero. The Gini Index can be used to analyze several concentration processes, such as the level of concentration of a company's shares held by few shareholders (IPECE, 2007; Silva, 2016).

Social Progress Index (SPI): the SPI[ii], created by a team under the leadership of Michel Porter, measures the performance of countries, through their strengths and weaknesses, in relation to a wide range of social and environmental performance aspects relevant to economic development. This index provides governments and companies with tools to monitor social and environmental performance in a rigorous manner to better inform investment and public policy decisions. In fact, it provides a concrete framework for understanding and prioritizing actions that promote social and economic performance (Mattedi et al., 2015; Porter et al., 2017).

Based on a holistic model, the index defines social progress based on indicators with exclusively social and environmental characteristics, with measurement of results, applicability and relevance for all countries. The index is composed of three dimensions which, in turn, are composed of four other components each.

The calculation is done by means of a simple average of the result of each of the dimensions, which in turn, are the simple average of its four components (Social Progress Imperative, 2017). The expression(4) shows how to obtain the Social Progress Index.

$$IPS = \frac{NHB\left(\frac{\sum_{i=1}^{4} A_i}{4}\right) + FBE\left(\frac{\sum_{i=1}^{4} B_i}{4}\right) + OP\left(\frac{\sum_{i=1}^{4} C_i}{4}\right)}{3} \qquad (4)^{iii}$$

The *BHN* is composed of the dimensions of Basic Human Needs that assess the degree to which a country meets the basic needs of the population and consists of basic nutrition, basic medical care, water and sanitation, housing and personal safety ($\sum_{i=1}^{4} \boldsymbol{A_i}$). The *FBE* is related to the "Wellness Fundamentals", consisting of the level of access to basic knowledge, information and communication, health and well-being and the sustainability of ecosystems ($\sum_{i=1}^{4} \boldsymbol{B_i}$). Finally, the *OP* is made up of individual rights, individual freedom and choices, tolerance and inclusion and access to higher education ($\sum_{i=1}^{4} \boldsymbol{C_i}$).

The scores attributed to each of the 12 components and the resulting three dimensions are obtained by using a scale whose limits are 0 (worst performance) and 100 (best performance). The SPI is then calculated using a simple arithmetic average of the three dimensions and can be used to present taxonomy of the countries studied (Mattedi et al., 2015).

3.1.4 Technological

Following the technological evolution related to the sector in which the organization operatesallows the creation of competitive advantages in the face of issues that may affect the organization's directions. In addition to being a determinant of GDP, due to investments, technological innovation is of extreme importance for the country's performance in international trade (Gregorié, 2014). In this context, some indicators are presented.

Research and Development Investment Index (R&D-II): the R&D-II[iv] contemplates the measurement of investment in research and technological development and presupposes investments in knowledge management. Represented in percentage, its calculation is given by the ratio between the total amount spent for R&D and the GDP of the period, as presented in the expression(5).

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$$R\&D - II = \frac{GP\&D}{GDP} \quad (5)$$

Being: *IP&D* percentage of *GDP* designated for investment in *R&D; GP&D* total *R&D* expenses in the period; *GDP* of the analyzed period.

High Technology Export in Monetary Values Index (HTEMV): the HTEMV has its origins in the statistical and methodological concepts of the classification of the level of technological intensity that follows the methods developed by the Organization for Economic Cooperation and Development (OECD) in partnership with Eurostat (Statistical Office of the European Union). The technological intensity is related to the level of research and development specific to the sector (measured by the ratio of R&D expenditures to value added) and technology incorporated in the purchase of intermediate and capital goods in the internal or external market (Hatzichronoglou, 1997).

More technologically advanced industries are more R&D intensive. The distinction between the medium-high and medium-low groups and between the medium-low and low groups is clearer when the R&D intensity is calculated in terms of output rather than in terms of added value. In both cases, cut-off points provide stability over time and average stability across countries (Hatzichronoglou, 1997; MDIC, 2018).

Thus, industries that allocate a high proportion of billing or production to R&D make use of more advanced equipment and intermediaries. For such industries, there is a strong differentiation between direct intensity (countries whose industry are pioneers in technological progress) and indirect intensity (countries whose industry imports technology), which are generally related to developed and developing countries, respectively (Hatzichronoglou, 1997; Moura, 2015).

Moore's Index: on the other hand, Moore's Law, considered a technological barometer, came from the observations of Gordon Earl Moore in 1965 when he found that integrated circuits would be the way to cheaper products. This law made it possible to measure the innovation and development trend and make projections for the coming years, considering the model of device existing at the time (Moore, 1965, 2006; D'Emidio, 2009; Braga, 2009).

Important contributions of this law to technological development were perceived since: a) technology companies used it to define their development goals, since it is possible to predict what will be developed by competitors in the next 18 months. This drives the search for innovation, otherwise it will succumb to competition; b) its application is given to several segments of the processor industry such as computers, digital machines, telephone, among others; and, c) the reduction of innovation costs have made them increasingly accessible, which influences social and economic behavior (Braga, 2009; Rojas, 2012).

3.2 Corporate Level Indicators - Micro Organizational Environment

The external microenvironment of organizations is formed by the agents close to the sector of the company's operation as customers and local society, suppliers, competitors, and other institutions. Knowing this environment allows managers to develop appropriate strategies to generate competitive advantage and differentiate themselves from their competitors. In this context, indicators related to this micro environment are extremely significant. Some of these indicators were categorized according to the analysis model of the micro environment MC, considering the following external variables: Market and Consumer.

3.2.1 Market

Concentrated or centralized markets, also known as oligopolized markets, are the result of some degree of capital concentration (Silva, 2016). Three important indicators were identified by this study and are related to the level of participation and concentration of companies in the market and the index of corporate sustainability.

Herfindahl-Hirschman (HHI): another important market indicator is HHI. Created by Orris C. Herfindahl and Albert O. Hirschman, this indicator is considered one of the main forms of concentration analysis of a company in a given sector and is defined by the sum of the squares of the percentage participation of each company in relation to the total size of the company sector (market share) (Oliveira, 2014). This indicator takes into account all companies in the industry and is calculated by the expression(6).

$$HHI = \sum_{i=1}^{n} S_i^2 \quad (6)$$

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Being: n total number of companies in the sector; S_i market share i; and $i = 1, 2, 3, \ldots, N$, a type of company in a given market. One of the great advantages of this indicator is that when the share of each company is squared (S^2), it considers its relative size, because it attributes greater weight to the companies with the larger participation shares, and lower weight to those with smaller participation (Bittencourt et al., 2015). Market classification parameter based on HHI result can be summarized as follows: HHI close to 0 (zero) for Perfect competition; $0 \leq$ HHI $<$ 1.000 for Low concentration; 1.000 $\leq$ HHI $<$ 1.800 for Moderate concentration; HHI $>$ 1.800 for High concentration; HHI = 10.000 for Monopoly (Oliveira, 2014).

The HHI allows assessing the degree of market concentration due to the level of inequality of competition among companies in a given sector and is the most used by the antitrust authorities to monitor possible situations of cartel formation and monopolistic combinations in the market.

Business Sustainability Index (BSI): created in 2005, its objective is "to reflect the return of a portfolio composed of shares of companies with a recognized commitment to sustainable development practices and strategic alignment with sustainability entrepreneurs, highlighting them for investors" (BM&FBOVESPA, 2015, p.5). Thus, this index acts as an inducer of good practices in the Brazilian business environment, creating an investment environment compatible with the demands of sustainable development of contemporary society and encouraging corporate ethical responsibility (Guimarães et al., 2016).

The BSI consists of a theoretical portfolio of assets, resulting from the comparative analysis, of up to 40 companies. To be a part, it is necessary that the company be among the issuers of the 200 most liquid shares of BM&FBOVESPA and traded at least 50% of the trading sessions of the last 12 months until the formation of the annual portfolio (BM&FBOVESPA, 2015). According to Guimarães et al., (2016), this index is adopted as a strategy for companies that seek good visibility to their stakeholders through sustainable initiatives and disclosures, in order to obtain a competitive advantage in the market.

3.2.2 Consumer

The raison d'être of organizations materializes with the existence of customers and satisfying them is the order. Customer loyalty occurs when the organization manages to satisfy a customer group, that is, when the values and benefits offered are perceived by them. The three dimensions of relationship between the client and the company are defined by the scope of the organization; the richness and depth of the information flow between the two; and affiliation from helpful interactions that help customers find what they are looking for and provide data about their preferences (Hitt et al., 2011). In this context, two indexes related to consumer confidence and dissatisfaction must be known to the organization for strategic orientation.

Consumer Confidence Index (CCI): the first of them is the CCI. This index is used to project changes in economic activity by expressing the consumer's feelings about their personal economic situation and that of the country in the short and medium term. Such a feeling directly impacts behavior and attitude toward current and future consumption and is measured through a number of questions answered related to economic factors such as: consumers' assessment of their financial situation, employment opportunities, spending intentions and their opinion on the general economic conditions (Karagöz & Aktas, 2015).

The index raises other factors of market interest such as the intention to buy durable goods, price developments and the ability to economize on expenses. The CCI[v] results range from 0 to 200 points. The 100 index demarcates the border between the situation of pessimism and optimism. Below 100, the situation is assessed with pessimism and above 100, with optimism.

The CCI is calculated through a random sample of consumers that is Representative of the population and is based on five questions that are part of the Consumer Expectations Survey, two of which are related to the current present survey (form the Current Situation Index (CSI)) and three others related to future expectations - form the Expectations Index (EI). According to the IBRE (2018), the contents are: local economic and financial situation of the family at the moment and in the next six months; and, intention to purchase durable goods in the next six months. The calculation of the CCI is given by the calculation of the expression(7).

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$$CCI = \sum_{q=1}^{5} \left[\frac{Indicator_{q,T}}{5} \right] \quad (7)$$

Being: $Indicator_{q,T}$ indicator of each question "q" in Brazil's total "T"; q =1,...,5 represents the five items that make up the Index.

American Customer Satisfaction Index (ACSI): the second is the ACSI developed by Fornell in 1994 in conjunction with the American Society for Quality Control and the University Of Michigan School Of Business. This index presents fundamental properties related to its generic characteristic for application in any sector and its capacity to establish cause and effect relationships.

According to the proposal of Fornell et al. (1996), the cause and effect model shows that the constructs "perceived quality", "customer expectations" and "perceived value" precede the central construct "global customer satisfaction". This, in turn, precedes the consequent constructs "customer complaints" and "customer loyalty", so that relationships are hypothesized. According to Moura et al., (2014), the expectation variable has a positive effect on perceived quality and value, as well as on overall satisfaction. Perceived quality, in the same way, contributes to perceived value and to overall satisfaction.

Perceived value, determined by perceived quality and expectations, acts positively on the overall satisfaction variable. Related to satisfaction, the model assumes that an increase in overall customer satisfaction reduces the occurrence of complaints and contributes to increased loyalty.

The final result of the application of this model is an index, which will be calculated by means of a specific formula, based on three indicators of the central construct of global satisfaction, which are: general satisfaction, disconfirmation of expectation and comparison with the ideal. This index should be compared with those of other companies in the sector (Moura et al., 2014).

3.3 Business and functional level indicators - internal environment of the organization

Organizational strategies for the internal environment aim to develop core competencies (made up of tangible and intangible resources) that enable organizations to create value for their stakeholders and thus achieve above-average returns (Hitt et al., 2011). The measurement of company performance can be defined as a "process of calculating the efficiency and effectiveness of the action" managed by the managers (Souza & Correa, 2014, p.120). Thus, performance and evaluation indicators have as function to identify if the goals determined by the top management are being achieved (Veyrat, 2015).

As a result, knowing the internal processes and the factors that impact the final result will allow the company to establish clear objectives and well-defined performance goals. In this context, some of the most used Financial and Process Key Performance Indicators (KPIs) used to evaluate internal processes of organizations are presented here as variables controllable by the organization.

3.3.1 Financial Indicators

Tobin's Q: Tobin's Q, created by Tobin in 1969, is an analytical indicator for future investments. Through the ratio between the market value of the company and the cost of replacing its assets, this index measures the incentive to make new investments with opportunities for future growth (Famá & Barros, 2000). After its creation, scholars sought an application through real data that approached the theoretical q. According to Colauto et al. (2009), this approach was proposed by Lindenberg and Ross (1981), through the expression(8).

$$q = \frac{VMA + VMD}{VRA} \quad (8)$$

Being: VMA market value of the shares or the company's equity; VMD market value of short and long-term debt or the capital employed by third parties; VRA market value for replacement of the assets or the monetary disbursement necessary to buy the same productive capacity, with modern technology and minimum cost.

However, Famá and Barros (2000) and Colauto et al. (2009) point out that obtaining accurate market values for debts and assets requires a high effort because the data are not easily available. As an example, one of the difficulties in

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calculating the value of assets at market price is precisely the absence of an asset market for used goods. In this case, the assets should be adjusted by the book value considering: the variation of prices in the economy, technological variation of the period and real (non-accounting) depreciation of the assets.
In this way, Colauto et al. (2009) draw attention to the fact that studies have shown a similarity in the values of Tobin's Q found by the calculation of expression(8), proposed by Lindenberg and Ross (1981), and expression(9) proposed by Chung and Pruitt (1994). According to the authors, the expression(9) is more conservative regarding the effort required to obtain the information and based on the accounting values of the company, except for the market value of the shares.

$$q = \frac{VMao + VCap + VCDlp + VCest + VCDcp + VCRcp}{AT} \quad (9)$$

Being: $VMao$ market value of common shares; $VCap$ book value of preferred shares; $VCDlp$ book value of long-term debt; $VCest$ book value of inventories; $VCDcp$ book value of short-term debt; $VCRcp$ value of current resources, of current assets; and, AT Value of total assets.
According to Famá and Barros (2000), because Tobin's q represents a ratio between two values over the same group of assets, its value is expected to be q=1. Thus, "if the market value is greater than the replacement cost (q>1), then it is worth investing, otherwise (q<1) the firm should not make the investment. Therefore, investment is a growing function of the relationship q" (Kammler & Alves, 2004, p.2).

According to Colauto et al. (2009), Tobin's q captures information not measured by conventional financial and economic indicators, which reinforces its use for internal analysis of the organization and sectoral studies.
In addition, the economic and financial indicators allow to diagnose the performance, in terms of balance and financial health, and to understand the actual performance of the organization. The information used to calculate these indicators is available in the Balance Sheet and Income Statement. The most used for financial analysis of the organizations are those of liquidity and profitability. In order to analyze the economic situation, there are profitability indicators (Ribeiro & Boligon, 2009; Nascimento et al, 2011; Correia et al., 2017; Vieira et al., 2017).

Liquidity: these indicators, presented in Table 1, assess the ability to settle the obligations of the company immediately, if necessary. Considered an important indicator, a change in these indexes in relation to previous periods should be reasoned by the managers.

Table 1 – Liquidity Indicators.

Indicators	Formula	Represents	Result
General Liquidity (GL)	$GL = \frac{AC + RLP}{PT}$	How much the company possesses in money, goods, and rights in the short and long term.	The Bigger the Better
Current Liquidity (CL)	$CL = \frac{AC + RLP}{PT}$	How much the company possesses in money, goods and, rights in the short term.	
Quick Ratio (QR)	$QR = \frac{AC + RLP}{PT}$	How much the company has in money, goods and, rights in the short term, without inventories.	

Source: developed by the authors based on the theory.

Being: AC Current Assets; RLP Long-Term Accomplishable; PT Total Liabilities. Analysis of the results, considering the term of each indicator: if> 1, there is a gap available for possible settlement of obligations; if=1, values of equivalent goods, rights and obligations; if<1, if necessary, there would be no cash to settle the obligations.

Profit: these indicators, presented in Table 2, allow us to evaluate the operational efficiency of the organization, showing, in percentage, the gain from the activity performed and billed.

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Table 2 – Profit Indicators.

Indicators	Formula	Represents	Result
Gross Profit (GP)	$GP = \left[\frac{(Vdas - CMV)}{Sales}\right] * 100$	Percentage of sales minus the cost of goods sold.	The Bigger the Better
Net Profit (NP)	$NP = \left[\frac{(Vdas - CMV - DVF)}{Sales}\right] * 100$	Percentage of sales minus the cost of goods sold, variable and fixed expenses.	

Source: developed by the authors based on the theory.
Being: CMV Cost of Sold Merchandise; DVF Variable and Fixed Expenses.

Profitability: these Indicators, presented in Table 3, represent the income margin that a company receives related to income through the execution of its activities. These Indicators indicate whether the strategy adopted by management is on the right track and assists in making decisions about new investments.

Table 3 – Profitability Indicators

Indicators	Formula	Represents	Result
Return on Assets (RA)	$RA = \frac{LL}{AT}$	Efficiency of the application of the assets and the profits generated by them	The Bigger the Better
Working Capital (WC)	$WC = \left(\frac{RV}{AT}\right) * 100$	The total sales made with the company's assets.	
Return on Equity (ROE)	$ROE = \left(\frac{LL}{PL}\right) * 100$	The net profit or loss obtained in relation to the amount invested by the shareholders.	

Source: developed by the authors based on the theory.
Being: LL Net Profit; AT Total Assets; RV Sales Revenue; PL Net Worth

3.3.2 Process Indicators

The organization, through its dynamic capabilities, is structured by processes that transform inputs into services or outputs and are self-regulated by feedbacks. With globalization, the emphasis on productivity shifts from efficiency in the execution of tasks to effectiveness in achieving objectives; excellence and high performance in internal processes are no longer a requirement of luxury to become a condition of survival and business continuity. Thus, some Indicators presented in Table 4 were identified as conclusive for effective maintenance of good performance.

Table 4 – Process Indicators

Indicators	Represents
Effectiveness	Conjugation between Indicators of effectiveness and efficiency.
Productive Capacity	Relationship between the amount that can be produced and the time for this to occur.
Productivity	Relation between the outputs generated by a work and the resources used for it, that is, the efficiency of the process in obtaining the Results.
Quality	Relation between the total outputs that were produced and the outputs without defects or nonconformity, adequate to the use / consumption, that is, the effectiveness of the company in meeting the clients' needs.

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Value	Relationship between perceived value when receiving something (example a product) and the amount actually spent to obtain what was received.

Source: developed by the authors based on Veyrat (2015, p.2); Martini et al., (2015).

According to Martini et al. (2015), Indicators Represents an instrument for monitoring and evaluating internal activities, giving the company the opportunity to identify and implement improvements and, thus, establish effective strategies.

4 Final Considerations

The relevance of this work lies in the fact that the understanding and simultaneous use of multiple Indicators allow decision makers to act with a real managerial and organizational planning instrument. Although the indicators present a limitation by portraying past events, their use is relevant for comparative and competitive effects among corporations, besides serving as guiding factors for goal setting and continuous improvement.

In turn, each indicator was reported under a corporate level and for which they are indicated for monitoring and strategic control. In this sense, to ignore the importance of the potential of these indicators in the process of defining preventive strategies is to manage guided by intuition alone. Such a decision becomes increasingly risky as the business environment becomes more complex.

Ensuring the *latu sensu* sustainability of the organization requires a methodological management rule. The evolution of the complexity of the business environment demands a systematic knowledge of management tools. The synthesis presented in this article sought exactly to contribute in this direction.

It should also be noted that a second set of Indicators that capture more qualitative aspects of business reality should be concomitantly used with the quantitative Indicators presented here. In this sense, it is emphasized that questions concerning the motivation of the work teams, organizational learning and job satisfaction are qualitative aspects no less important for an understanding of the complexity implicit in the management task.

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IMPACT OF ORGANISATIONAL COMPETENCIES, EXPERIENCE & EXPERTISE ON THE PERFORMANCE OF THE ORGANISATION IN THE INDIAN MANUFACTURING INDUSTRY

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Executive Summary

Achieving competitive advantage strengthens a business to generate higher value for its stakeholders and profit margins for the business. Organizations in current business scenario have a relative easy access to tangible resources like money, raw material etc. due to liberalization and globalization. However, the competitive advantage recognizes an enhanced utilization of intangible assets, which has been covered in the form of competencies and tacit knowledge of employees in an organisation (Barney 1991). In such a scenario, a requirement was felt to understand the impact of these intangible assets at an organisational level on organizational performance in Indian Manufacturing Industry.

Managing knowledge in explicit, implicit and tacit form is one of the essential part of companies' strategies, and the objective of this research article is to study the impact of knowledge on the organisational performance. In this paper we have addressed organizational in the form of competencies, experience and expertise. The research focusses on measuring the intangible resources. The research is based on the theoretical grounding of resource-based view and knowledge-based view, wherein organizational knowledge is considered as the significant resource for creating competitive advantage.

On reviewing the literature, it was found that there have been very few studies, which focus on the association of people's factor with competencies, experience & expertise and their influence on organizational performance. Data of various studies also confirmed that there are different studies conducted in diverse domains of intangible assets like manufacturing competencies, functional competencies, and their impact on the organizational performance. However, it was identified that there is a need to examine (1) managerial competencies along with the function competencies in the context of an organization, (2) studying experience and expertise at the organizational level. The requirement to address the insufficiencies in the literature in the context of the intangible assets, their impact on the performance of the organization, has motivated the requirement to carry out this study.

The study started with a detailed review of literature related to intangible assets covering organizational competencies, organizational experience, organizational expertise and balance scorecard, which resulted in developing the conceptual model for the research. The conceptual model developed laid the foundation for relating organizational competencies, organizational experience, and organizational expertise with the parameters of organizational performance i.e. Financial Perspective, Customer Perspective, Internal Business Process and Learning and Growth Perspective. The association was developed through 16 hypothesized relationships in the study. These hypothesized relationships were further tested through a quantitative study, wherein survey through questionnaire approach was used to collect data from the representatives of the Indian manufacturing industry. Through online survey, face-to face or telephonic interactions with the respondents of the industry. This data was further evaluated, and structural equation modelling method was used to test the hypothesized relationships stated in the current study.

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The study contributed to the literature of organizational performance by creating a model, which can be utilized to determine the key intangible assets of organizational performance. The study represents an essential contribution to the academicians and to the practitioners. Wherein, the theoretical implication of this research is important since the earlier researches have discussed competencies, experience and expertise primarily at an individual level. However, the current research adds in this theory by encompassing the scope of intangible assets at an organizational level and emphasizing their influence on the organizational performance.

Key words: Organisational Competencies, Experience, Expertise, Organisation Performance.

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Introduction

In the ever-changing scenario where markets are dynamic, competitors are growing at a lighting speed, technologies are multiplying expeditiously, and products becoming obsolete overnight, successful companies innovate continuously. One of the ways is by creating new knowledge, sharing it across the organization and swiftly integrate the knowledge in new products/services and processes.

According to Nonaka (1998), successful organizations that focus on creating knowledge within the organization, develop different ways to redirect knowledge and position it in any business organizations. In addition, most of these organizations consider that merely creating knowledge is not a matter of automatically dealing with objective information, but also tapping the tacit and often extremely subjective information and perceptions of employees and at the same time making sure that those insights are managed and available for the use of organization as a group. This type of knowledge is available and used in the form of slogans, metaphors, and symbols, wherein these are indispensable tools for continuous improvement. The theory of organizational knowledge creation explains the process of combining the knowledge held by individuals and organization can be enlarged and synergized in building knowledge-based organizations. This theory also emphasis on the fact that the contribution of an individual as essential elements in creating new knowledge at the organizational level (Nonaka 1994), and the knowledge of individuals in an organization results in innovation, when they are given appropriate environment to create and innovate. This gives an edge to the organizations in terms of their performance and creating wealth for their stakeholders, wherein, these organizations are categories as one who explore and generate new forms knowledge while others are capable of exploiting existing knowledge (Zack 1999), however, in both the scenarios, the result would be improved organizational performance. Knowledge as a fundamental resource by knowledge-based organizations, and knowledge collectively with its successful management is transformed in a factor that differentiates successful companies from not so successful companies and facilitates competitive advantage in the volatile market (Brown & Duguid, 1998) and Davenport & Prusak (1998)). The suggested advantages generated by knowledge include effective decision-making, increased innovation, competitive advantage, and operational efficiency. Nonaka and Takeuchi (1995) considered knowledge as a strategic resource, which enables an organization to attain competitive advantage.

This in turn refers to the fact that everyone in an organization must constantly aspire to acquire new set of knowledge and expand wisdom. Also it becomes extremely critical that individuals in an organization should possess an attitude that knowledge is a reservoir to be shared rather than to be holdfast. The knowledge when shared, builds the foundation for organizational experience and expertise. Despite the fact that appreciation is growing towards impact of intangible assets / resources in organization performance, the research conducted in this context is in the form of anecdotal studies, case studies (Carmeli & Tishler (2004). Carmeli & Tishler (2004) stated in their research that comparing the impact of intangible elements on organizational performance across the private and the public sectors would be an interesting avenue for researchers. Nguyen (2008) studied the manufacturing companies in Vietnam and addressed four functional competencies (manufacturing, marketing, research & development, and human resource) and their influence on the performance of the organisation. This paper studied the impact of intangible assets i.e. functional competencies on organization performance. Masoud (2013) studied the influence of manufacturing competencies on the organisation's performance, and highlighted that literature for linking managerial competencies to the organisation's performance (sales, customer satisfaction, and employee engagement) is limited. Jabbouri and Zahari (2014) explains the role of core competencies (organisational resources, human resources and capabilities) on

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improving the organisational performance, wherein Dubey and Ali (2011) suggests that to improve an organisational performance in the manufacturing companies in India, organisations have to focus on their functional competencies. Osei and Ackah (2015) concluded that in order to achieve high standards of performance, an organisation has to expand the scope of learning, enhance the level competencies. According to Chander & Mehra (2011), the management of intangible assets like experience is unorganized and unsystematic. Further research in the domain of intangible assets is done in service and knowledge based sectors to explain the impact of intangible assets on the organizational performance (Carmeli & Tishler (2004).Considering the earlier studies, the current research aims to bridge this gap by studying the impact of the intangible assets / resources like experience, expertise and competencies on the overall performance of the organization in the context of Indian manufacturing industry.

With the aim of achieving the objectives of the research, two major questions are:

RQ1 What are the factors constituting intangible assets?

RQ2 What is the impact of the intangible assets on the Organizational performance?

The attributes of experience and expertise have been studied at individual level but this study focusses relevance and the need to identify and validate the attributes of organizational competencies, experience and expertise, which lead to enhanced organizational performance. Wherein, the fundamental view of organizational knowledge is that it exists in the form of practices as a consequence of earlier experience which direct future actions (Levitt & March, 1988).

1. Literature Review

The focus of the current research is on the organizational competencies, organizational expertise and organizational experience and its impact on the organizational performance in the Indian Manufacturing Industry.

Competencies

Boyatzis (2011) defined competencies as capabilities, which is a cluster of related but diverse group of 194behaviour organized around a fundamental construct called the 'intent'. Prahalad & Hamel (1990), stated that competencies are the combined learning in the organisation and organizational learning processes contributes crucially in the creation, maintenance of the organisational competencies. According to Sherman (2004), the process of development and creating competencies in an organisation is driven from the core competencies for business. This leads to documentation of individual competencies by understanding of the critical success factors that differentiate the organization from its competitors. The performance of an individual in a particular role demonstrates the managerial and technical competencies. The current research defines organizational competencies as the collective learning of the organization (Pralahad & Hamel (1990)) and set of knowledge (know-how) and skills along with their practical implication (Edgar and Lockwood 2008). Organizational competencies are closely associated with the performance of the organization and capacity building resulting in competitive advantage and are closely correlated with the growth and development of the business (Man 2001 as cited in Lopa & Bose (2014). Thus for businesses which aim at high level of performance amid competition, they would acquire and leverage organizational competencies and also ensures creation of new products & services to gain an edge in the market (Edgar & Lockwood 2008). Based on the literature review the organizational competencies considered for the current research are:

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Managerial Competencies	Functional Competencies
Cross Function Groups	Marketing Competencies
Leadership Team	Research & Development Competencies
Learning Environment	Production Competencies
Change Management	

Experience

The definition of knowledge adopted in the current research is the information combined with experience, perspective, interpretation, and reflection of a context, which can be applied for decision making, solving problems and taking appropriate actions (Dewey 1989). The term experience is over and again used in association with knowledge and learning, where experience as a state (*having experience*) is a subset of knowledge (Dewey 1989). According to Yelle (1979), organizational experience involves gaining experience with products and services, achieving efficiency through innovation and making improvements in working practices and methodology. This experience at an organizational level can be observed in change of behaviour. The organizational experience could be entrenched in a wide range of repositories, including individuals, routines, databanks and memory systems in an organization.

Expertise

Expertise is principally based on the fact that, an individual who is referred as expert has achieved a level of proficiency in a specific domain ((Philips, Klein & Sieck 2008), thus outlining it as an 'expert skill or knowledge. In another study expert is someone who is proficient in making decisions, predictions in their defined area of work and enjoy the state of professional and social credentials among the peer group (Camerer and Johnson 1991). On reviewing the literature, it was found that expertise could also be defined as competence and proficiency of an individual by virtue of owning the knowledge of a specific function or task. Karhu (2002) states that the process of extensive knowledge develops expertise, the expert is equipped to respond to any situations intuitively by identifying the situation and suggesting applicable solutions, and in addition by utilizing the experience for further analysing difficult problems. However, Scribner views expertise as a function of experience. Mieg (2001) discusses the concept of expertise differently, as experts as specialist having specialized knowledge.

Expertise consists of the characteristics, skills and knowledge of a person (that is, expert) or of a system, which distinguish experts from novices and less experienced people. Literature review gives insight to the key distinguishers of an individual moving from an experienced person to an expertise level. The key differentiators are (a) problem solving (*ability to solve problems*), (b) risk taking (*ability to take higher risk*) and (c) decision making (*ability to take faster decision*).

Organisational Performance

According to Richard (2009), performance of an organization incorporates three specific parameters for results. These parameters are financial performance (which covers profits, return on assets, return on investment etc.), secondly product-market performance, which is based on sales, market share, etc.), lastly the shareholder return counting total shareholder return, economic value added, etc. Many different constituencies, resulting in many different interpretations of "successful performance", can judge organizational performance and each of these perspectives is unique. Further, each organization has a unique set of circumstances, making performance measurement essentially situational (Cameron & Whetton, 1983). Kaplan & Norton (1996) presents view Balance Scorecard (BSC) as a tool for measuring organizational performance by integrating four perspectives that cover all the important processes, procedures and activities

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of an organization. These four perspectives are financial, customer, internal business process and learning & growth and they provide a framework for the Balance Scorecard. Linkages and relationships between customers, internal process and learning/growth with financial performance.

2. Theoretical Model

In this research, Resources Based View (RBV) and Intangible Resources/Assets formulate the basis for understanding the key construct that constitutes the intangible assets in an organization and their impact on the organizational performance. Balance Scorecard (BSC) by Kaplan & Norton (1992) facilitates the research to identify organizational performance indicator.

Resource Based View (RBV)

Resource based view was developed to understand how an organization can attain the level of sustained competitive advantage (Halawi, Aronson & McCarthy 2005). Unlike, conventional supposition that the accessible resources are homogenous, RBV theory counter that the resources are heterogeneous and are not evenly transferred between organizations (Barney, 1991; Barney 1999). Okpara (2015), explains resources as accumulation of knowledge, human capital, intangible assets, physical assets available within organization and can eventually be utilized and transformed into valuable products and services.

Literature review reveals that intangible assets contribute in generating value for an organization much higher than as compared to the tangible assets. Nonetheless, most of the studies in this regard are limited to the developed nations and there still prevails a knowledge gap on this area regarding the developing nations. If the information is assumed universal, then it may lead to wrong results. Therefore, it is important to study this model separately for developing nations (Okpara (2015). The Resource-based view of the organization suggests that factors within the organization are to a great extent accountable for creating sustainable competitive advantage and better quality output and performance in an organization. To be more precise, the RBV predicts that deployment of inimitable resources and capabilities can upshot the sustained superior performance. In this research, we are describing intangible assets and organizational capability as integration of organizational level competencies (skills), experiences and expertise to achieve organizational goals or organization performance, which we are further describing through Balances Score Card.

Intangible Assets

Nowadays, most of the organizations including the manufacturing companies are not merely selling products to its customers but is selling experience in- terms of customer service, expediency and even more. In this regard, intangible assets are considered as an important asset by most of the successful companies, albeit the contribution of intangible assets is not understood adequately (Lin & Tang 2009). Lev (2005) make use of the terms intangible assets, knowledge assets and intellectual capital interchangeably and put forward a viewpoint that these terms differ merely in the discipline of origin, wherein intangible assets are knowledge assets for economists and intellectual capital for managers and lawyers. Thus, intangible assets, when explained in terms of intellectual capital are deep rooted in the experience and expertise of the individuals who belong to the organization. This can be in form of decision making, problem solving, it is an integral part of the assets which adds up value and worth of an organization, though intangible assets and tangibles are not independent and coexist in the organizational setting (Carayannis, 2004). Intangible assets can be described as a combination of knowledge, skills, competencies, experience and expertise along with technology, which can deliver more value to the organization in the form of sustainable competitive advantage (Gamayuni (2015).

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Resource Based View and Intangible Assets

Resources are transformed into product or services by making use of the various assets available with the organization (Raphael & Schoemaker 1993). These resources include wide range of assets, capabilities, process, information, knowledge etc. (Barney 1991). Accordingly RBV suggest that resources to be counted should be able to (Barney 1991), a) create value for the organization, b) rare, which is not easily accessible to the rivals of the business, c) the resource has to be inimitable, and cannot be copied easily d) non-transferable.

Researchers refer RBV as the foundation of competitive advantage of an organization. It emphasizes primarily on the implementation of collection of resources (tangible or intangible). RBV and intangible assets can be positioned in the similar platform, though equating two is not an easy task. On reviewing the two, it reflects that they are linked with the business strategy and enables an organization to sustain superior performance and competitive advantage. However, this is based on the interaction between the assets and resources available within the organization and the capabilities transfer the assets into products and services with higher value (Kristandl & Bontis 2007). Notwithstanding, it is important to understand that intangible assets which are not able to add value, are imitable and are not unique may not contribute to the superior performance of an organization.

Knowledge Based View (KBV)

With the increasing focus on knowledge in current scenario, there is an incremental movement towards a race of gaining competitive advantage with the help of knowledge (Halawi, Aronson & MacCarthy 2005). In addition, success of the business is not just associated with the financial perspective or physical resources only, but is deep rooted in how effective an organization can channelize its intellectual capital or knowledge. In the present scenario, there is acceptability to the achievements attained through the mode of knowledge-based resources and big organizations are paying higher attention towards the significance of knowledge for gaining higher efficiency and competiveness (Halawi, Aronson & MacCarthy 2005). It is further stated and discussed that knowledge based resources are complicated to imitate or reproduce since they are complex and diverse in nature therefore are foremost factors for sustained competitive advantage (A. Fenwick, 2011). Additionally, recent concepts of the knowledge-based view of the firm indicate that organizational learning plays a key role in the sustainability of competitive advantages.

Knowledge itself cannot be "managed." Nevertheless, knowledge that is captured and transformed into a resource (*tangible or intangible*), is definitely a product commodity, which can be considered as a valuable asset in order to enhance the performance of the organization and generate returns. However, neither for the organization nor for employees it is possible to own any of such assets unless it is captured and transformed into any new knowledge or skill that can be reused or applied in other areas in the organization. These knowledge or skills can be a new learning process, a new operating policy, a strategy, or even a new process (Shah and Khedkar 2006). Most of the big organizations in India are aggressively on the lookout for ways of leveraging their "human capital" synonym with knowledge capital to develop and expand their strategic advantage. Curado (2006) states that knowledge based organizations are considered as learning organizations and are quick innovators. However, knowledge hoarding with individuals can significantly affect an organization; whilst knowledge sharing gives an additional advantage to the organization by allowing the knowledge to reside within the organization's periphery. KBV enables an organization to develop a process of acquiring knowledge from within the organization or from different sources and turning it into explicit information that the employees can use to transform into their own knowledge allowing them to create and

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increase organizational knowledge.

Knowledge based view (KBV), is an extension of the RBV of the firm where the knowledge is considered as one of the most critical resources, which is non-depreciable and has a capability to create returns. These resources are primarily intangible in nature, which forms the foundation of the in the Knowledge-based view of the organization (Curado 2006).

Balance Scorecard

In the current research the measures of Organizational performance is based on the principles of Balance Scorecard (BSC). It is a multi-dimensional framework, which focuses more on non-financial information and is designed to provide a balance by including measures of external success as well as internal performance, and measures that are designed to give an early indication of future organizational performance as well as a record of what has been achieved in the past.

Conceptual Model

The conceptual model analysing the impact of intangible assets i.e. organizational competencies, organizational experience, and organizational expertise as key constructs on the organizational performance is developed and is shown in Figure 1.

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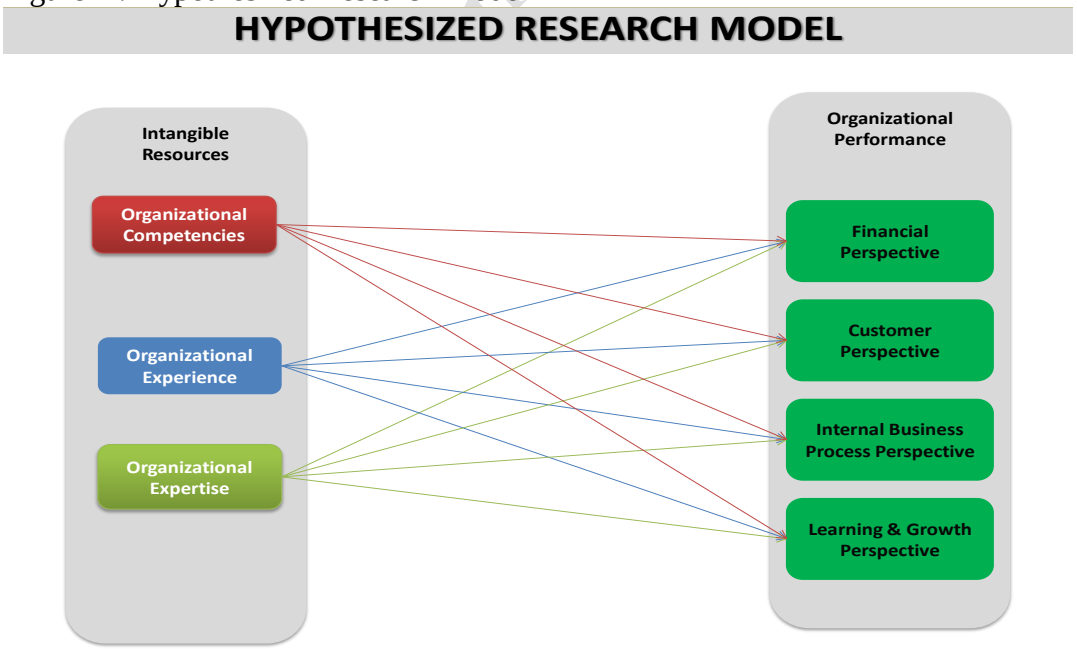
Proposed Conceptual Model

Figure 1 : Hypothesized Research Model



The constructs and their theoretical foundation is given in table 1. The hypothesis are as follows

Managerial Competencies

H1 (a) Managerial Competencies impact the Financial Perspective.
H1 (b) Managerial Competencies impact the Customer Perspective.
H1 (c) Managerial Competencies impact the Internal Business Process Perspective.
H1 (d) Managerial Competencies impact the Learning and Growth Perspective.

Technical Competencies

H2 (a) Technical Competencies impact the Financial Perspective.
H2 (b) Technical Competencies impact the Customer Perspective.
H2 (c) Technical Competencies impact the Internal Business Process Perspective.
H2 (d) Technical Competencies impact the Learning and Growth Perspective.

Organizational Experience

H3 (a) Organizational Experience impacts the Financial Perspective.
H3 (b) Organizational Experience impacts Customer Perspective.
H3 (c) Organizational Experience impacts the Internal Business Process Perspective.
H3 (d) Organizational Experience impacts the Learning & Growth Perspective.

Organizational Expertise

H4 (a) Organizational Expertise impacts the Financial Perspective.
H4 (b) Organizational Expertise impacts the Customer perspective.
H4 (c) Organizational Expertise impacts the Internal Business Process Perspective.
H4 (d) Organizational Expertise impacts the Learning and Growth Perspective.

Table 1: Constructs and theoretical foundation

Constructs	Definitions	Theoretical Foundation	Measurement items derived from the literature	Key reference
Organizational Competencies	Organizational competencies are defined as the collective learning of the organization and set of knowledge (know-how) and skills along with their practical implication while at work.	Knowledge Based View (KBV)	• Managerial Competencies • Technical Competencies	• *Wernerfelt(1984)* • *Barney(1991),* • *(Pralahad & Hamel (1990)* • *Amit & Schoemaker(1993)* • *(Edgar and Lockwood 2008).*
Managerial Competencies	Managerial competencies are defined as the set of behaviours which facilities the demonstration of effective performance for a given assignment in an organization.		• Cross Functional Team • Leadership Team • Learning Environment • Change Management	
Technical Competencies	Technical Competencies can be defined in context of the functions and processes in an organization. This further is added by knowledge of the subject and practical		• Marketing • Research & Development • Production	

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	understanding of the jobs specific to an assignment in the organization.			
Organizational Experience	Organizational experience involves gaining experience with products and services, achieving efficiency through innovation and making improvements in working practices and methodology.	Resource Based View	• Domain • Years of Experience • No. of Projects	
Organizational Expertise	Organizational Expertise indicates to the unshared knowledge instead of the shared knowledge is imperative and essential in organizations.	Resource Based View (RBV)	• Problem Solving • Risk Taking Decision Making • Tacit knowledge	
Decision Making	It is defined as a process wherein decisions are taken considering alternative options available within the organization.			
Problem Solving	Problem Solving is the process of classifying and removing the sources of inefficiency and ineffectiveness in process of the organization alongside bringing improvements.			
Risk Taking	Risk Taking is a defined as a trait which encourages teams or organizations to take calculative risk. It is the ability to have the courage to undertake new assignments, projects that carry or involve risk			
Tacit Knowledge	Tacit knowledge is a knowledge which is not easy to transfer from one person to another person. It is integral to the individual and to the organization and is acquired over a period of time.			
Organizational Performance	Organizational Performance is defined as the actual outcomes or results of an organization and which can be measured against the intended objectives. Wherein the Organizational Performance encompasses of four major outcomes i) Financial, ii) Customer, iii) Internal Process & vi)	Balance Scorecard (BSC)	• Financial Perspective • Customer Perspective • Internal Business Processes Perspective	*Kaplan & Norton 1992 & 1996)*

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	Employees in terms of Learning & Growth		• Learning & Growth Perspective	
Financial Perspective	Financial Perspective evaluates if the organization is able to attain outcomes in the form of improvement in the bottom line, RoI, profitability of the organization.			
Customer Perspective	Customer perspective is defined as a parameter which examines if the organization is able to enhance its customer satisfaction index, customer retention and acquisition of new customer etc.			
Internal Business Process Perspective	Internal Business Process measures the no. of innovations, new product and designs development and enhancement of the process which improves the outcomes of the organization. It facilitates in achieving the customer and financial outcomes of the organization.			
Learning & Growth Perspective	Learning & Growth ensures the making of the long term growth and improvement set-up in the organization by covering employee satisfaction, employee engagement, employee retention, employee productivity, employee competencies as the core measures			

3. Research

This research primarily uses quantitative research methodology, wherein questionnaire-based survey was conducted to capture feedback on the key parameters of the research. The questionnaire was designed based on the literature review related to the identified parameters of the research. Pre-testing and pilot study of the questionnaire was done to check the validity and reliability of the survey instruments.

In order to answer the research questions and achieve the objectives of the current research, data was collected from the Indian Manufacturing Industry. Responses were collected through online survey, face-to face or telephonic interactions with the respondents of the industry. Statistical Package for the Social Sciences (SPSS)

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was used for the statistical analysis. Coding of the variable in quantitative research was done for better interpretation of the results. The data was analyses using Structural Equation Modeling (SEM), used to analyse structural relationships between measured variables and latent constructs that are defined by the conceptual model of the current research. This model is preferred since it estimates the multiple and interrelated dependence in a single analysis. Initial step of the research was to do an extensive review of the published literature and develop the conceptual model and hypothesis. The latent constructs included in the conceptual model were examined by collecting responses through a questionnaire from the representatives of the industry. This chapter describes the details regarding data collection procedures and statistical analysis methods employed in the study.

The current research majorly focuses on identifying and validating the key factors constitution intangible assets in an organization and impacting the organizational performance. Each research question is broken into 4 hypotheses to understand the impact of each factor on the performance of the organization. In the research individual level factors are not considered, every factor studies in the research is at an organizational level. Based on the literatures review, it can be inferred that the current research, the impact of organizational competencies, experience and expertise and its impact on Organizational Performance of Manufacturing Industry in the Indian Context.

In this research stratified random sampling method is used, which comprises the partition of a population into smaller groups which are termed as 'strata', wherein these strata are formed on the basis of the members who shared attributes or characteristics.In stratified random sampling all the organizations were divided in different homogeneous groups based on the size of the company, small size, medium size and large size organizations. The companies selected were further stratified in the basis of size of the company (i.e., no. of employees), company category. In addition, the population was stratified in the basis of gender, age, role and years of experience of the respondents. The study aimed to attain inputs from minimum 300 responses; therefore 50 organizations from each size group stratum were contacted for the study. Out of 250 organizations 304 responses were collected (Table 2).

Table2: Sample Distribution

Segments	**Size of the company**			**Total**	**%age (Frequency)**
	3,000 to 4,999 and Above	*1000 to 2999*	*Fewer than 500 to 999*		
Years of Experience	Large Size Company	Medium Size Company	Small Size Company		
1 – 2 Years	0	1	0	1	0.3%
3 - 5 Years	0	6	4	165	54.3%
6 - 9 Years	10	38	7	73	24.0%
10 - 20 Years	51	97	17	10	3.3%
20+ years	35	31	7	55	18.1%
Total	**96**	**173**	**35**	**304**	
%age (Frequency)	**31.6%**	**56.9%**	**11.5%**		

4. Data Analysis

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Analysis of data is a process of inspecting, cleaning, transforming, and modelling data with the objective of discovering useful information, suggesting conclusions, and supporting decision-making. This section the data analysis, interpretation and findings for the current study. In the research, data analysis is used to study the data that have been collected using the structured questionnaire.

Reliability of Latent Constructs

Reliability of the latent contracts was checked using Cronbach's alpha test for internal consistency. Literature review suggests that the values of the Cronbach's alpha less than 0.6 are considered as poor and above 0.7 are assumed to be acceptable and the value of Cronbach's alpha above .8 is considered to be good (Cortina 1993).

Table 3: Cronbach's alpha test: Reliability of Latent Constructs

Latent Factors	**Cronbach's alpha**	**Variance (%)**
CF	0.875	
LP	0.393	
LE	0.852	
MC	0.784	
MK	0.827	
RD	0.895	
PD	0.833	
PS	0.823	
DM	0.733	**71.02%**
RT	0.801	
TK	0.803	
ME	0.781	
OE	0.820	
FP	0.875	
CP	0.827	
IBP	0.822	
LGP	0.883	
Overall	**0.976**	

Note : CF : Cross Function Group; LP : Leadership Team; LE: Learning Environment; MC: Change Management; MK: Marketing; RD: Research & Development; PD: Production; PS : Problem Solving; DM: Decision Making; RT: Risk Taking; TK: Tacit Knowledge; ME: Managerial Experience; OE: Overall Experience; FP: Financial Perspective; CS: Customer Perspective; IBP : Internal Business Perspective; LGP: Learning & Growth Perspective.

Reliability

The Cronbach's alpha of 0.393 which is deemed to be poor for LP and 0.895 indicates that it is deemed to be good. The overall Cronbach's alpha value is 0.976, hence, all the items were considered for further analysis.

Validity

The principal component analysis was carried out to reduce large set of data to obtain meaningful smaller set of constructs. Each variable used in the analysis was measured by multi item constructs by factor analysis with varimax rotation to check the uni-dimensionality among the items. The constructs included in the confirmatory factor analysis had Cronbach's alpha of more than 0.8. The in Cronbach's alpha indicated the internal

consistency between the constructs and deemed to be good. All the items included in the analysis had factor loadings of 0.4. Hence, this indicated the assessment and validation by using the discriminant and convergent validity.

Testing of hypothesis

The output of the overall structural model with hypothesized relationships is represented in table 4. Total of 16 casual paths are defined in the table 4 below were examined using path estimates and critical ratio (C.R.). And the parameter estimates are also presented in the same table and demonstrates that C.R. values above 1.96 for 11 casual path confirming positive and statistically significant paths with β = .019, -.015, .105, .052, .039, -.052, .048, .037, .074, .019, .019 respectively.

Table 4: Hypothesis Testing Results

Hypothesis	**Path**	**Estimates**	**S.E.**	**C.R.**	**P**	**β**	**Hypothesis testing result**
H1(a)	MC <--> FP	.014	.008	1.849	.064	.014	Rejected
H1(b)	MC<--> CP	.019	.007	2.740	.006	.019	Accepted
H1(c)	MC<--> IBP	.015	.007	2.167	.030	.015	Accepted
H1(d)	MC<--> LGP	.003	.006	.480	.631	0.003	Rejected
H2(a)	CF<--> FP	.105	.015	6.971	***	.105	Accepted
H2(b)	CF<-->CP	.052	.010	5.065	***	.052	Accepted
H2(c)	CF<-->IBP	-.013	.009	-1.394	.163	-.013	Rejected
H2(d)	CF<-->LGP	-.011	.009	-1.217	.224	-.011	Rejected
H3(a)	ME<-->FP	.039	.009	4.181	***	.039	Accepted
H3(b)	ME<-->CP	.052	.010	5.285	***	.052	Accepted
H3(c)	ME<-->IBP	.048	.010	4.786	***	0.048	Accepted
H3(d)	ME<-->LGP	.037	.009	4.150	***	0.037	Accepted
H4(a)	OE<-->FP	-.011	.008	-1.400	.162	-.011	Rejected
H4(b)	OE<-->CP	.074	.012	6.304	***	.074	Accepted
H4(c)	OE<-->IBP	.019	.008	2.373	.018	.019	Accepted
H4(d)	OE<-->LGP	.019	.008	2.504	.012	.019	Accepted

S.E. = standardized error; C.R. = critical ratio; β = standardized regression weights
**** p < .001*

CF : Cross Function Group; LP : Leadership Team; LE: Learning Environment; MC: Change Management; MK: Marketing; RD: Research & Development; PD: Production; PS : Problem Solving; DM: Decision Making; RT: Risk Taking; TK: Tacit Knowledge; ME: Managerial Experience; OE: Overall Experience; FP: Financial Perspective; CS: Customer Perspective; IBP : Internal Business Perspective; LGP: Learning & Growth Perspective.

Findings and Discussions

The outcomes reveals that, organisational competencies (managerial & functional) have a direct influence on the tangible results of the organization, i.e. financial, customer and internal business process perspective. However, experience and expertise have a positive influence on the learning and development perspective in the organisation. According to Kolb (2014), experience is the source of learning and development. In this scenario the experience and expertise acquired over years is analysed and reflected in the form of the decisions taken, and solving the problems at different levels and the calculative risk which is taken to gain competitive advantage. Further, this reflection of experience and expertise, not only empowers the individual to learn, but

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also helps to identify any need for some specific learning before further experience is acquired.

Managerial Competencies and Organizational Performance

Internal business process focuses on the processes that have the highest influence on the customer satisfaction leading to overall performance. As studied in the literature review, performance reviews based on these perspectives enables the managers and leaders of the organization to understand whether the product and services offered are in line with the requirement of the customer requirements and towards the goals of the organization. As per the customer requirements, the processes have been strengthened and this can be accomplished by having emphasis on cross-functional groups, strong leadership teams and a constructive learning environment in the organization. The Cross-Functional groups have subject matter experts having certain competencies and set of capabilities, who work to resolve challenging issues to improve processes and productivity. One side, the leadership team based on their intellectual ability foresees the changes occurring in the business scenario and introduces changes in the processes and technology to satisfy customers. And on the other side learning environment forms the groundwork that enables the organization to achieve the business objectives of the organization. Further to add, processes by definitions are cross-functional groups and to bring improvement in the processes we need to enhance the competencies of the organization. Thus it can be concluded that managerial competencies positively influences the tangible performance of the organization through contracts like formulating Cross-Functional groups, dedicated and visionary leadership teams, creating learning environment and managing change in the organization.

Functional Competencies and Organizational Performance

The study identifies the impact of these functional competencies on the organizational performance and its four perspectives of performance, on the studied Indian manufacturing industry. Literature review has reflected that there have been direct relationships between marketing, research and development and production in the manufacturing companies resulting in sales volumes, ROI and overall performance of the organization. Research and development enables the organization to produce customized or new products and services, making the product marketable and as a result creating a sustainable competitive advantage over competitors. This competitive advantage enables to organization to build a strong brand image and attracting new customers. A focused research and development also helps the organization have continuous improvement in existing process, product & services and their quality. In addition, it aids the organization to focus on capacity utilization and enhancing productivity. The analysis of the responses suggests that Indian manufacturing companies who are putting more emphasis on marketing, research & development and production can expect higher profitability and overall performance. Therefore, to improve the tangible outcomes and performance of the organization through the means of customers and financial perspective, it is important to strengthen the functional competencies of the organization.

Organizational Experience and Organizational Performance

The data of the studied Indian manufacturing industry displayed that, to gain competitive advantage in the business through experience of the organization, it is important to focus on diversity. This diversity can be identified in terms of industry, experience level, handling business dealings, prior experience in the existing industry, and experience in the updated and latest technology, product and services along with managers who have spent multiple years in decision-making. With a right mix of teams and gaining experience with products and services helps an organization to achieve efficiency through innovation and making improvements in working practices and methodology. The analysis of the responses suggests that Indian manufacturing companies who are putting more emphasis on creating right team and lay emphasis on building wide range of

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repositories, including individuals, routines, databanks and memory systems in an organization. Many studies in literature have documented the association between experience and measures of operational performance (for e.g. Productivity enhancement, continuous improvement and innovation, creating cost effectiveness etc.). Experience is directly related to the knowledge base of an organization which is connected with the learning & development perspective. Since learning occurs from training imparted to the memory system and repositories of the organisation. Thus, it can be stated that organizational experience positively influences the performance of the organization.

Organizational Expertise and Organizational Performance

Organizational expertise in the study is defined as ability of a team or teams by virtue of having knowledge of a particular topic or project and the ability to prepare to respond to different situations. And also by recognizing the situation and evoking and appropriate answer, and in addition by using his experience for analysing new, difficult problems, taking right decisions and calculative risks. At the same time, creating process of ensuring that the tacit knowledge available in the organization is shared with fresher and junior employees creates an environment of learning and growth in the organization. By having a well-defined process through which the organization can convert tacit knowledge to explicit knowledge (by articulating it into concepts, systematic documents and repositories,) enables the teams to solve problems in shorter duration and offers solutions to the client, take right decision to improve processes and take calculative risk for growth of the organization. The learning cycle which leads to creating the knowledge base of the organisation is directly impact by the process of problem solving, decision making, approach to take risk and change as per the business requirement.

To conclude, the results of the research provides statistical significance of managerial competencies, functional competencies, organizational experience and organizational expertise on the four perspectives of organizational performance i.e. financial perspective, customer perspective internal business processes perspective and learning and growth perspective in the Indian manufacturing industry.

5. Conclusion

Findings with regard to research questions

RQ#1 Factors constituting intangible assets

The current research defined the intangible assets as an amalgamation of knowledge, skills, competencies, experience and expertise along with technology, which can add up value to the organization in the form of sustainable competitive advantage and performance of the organization.

One of the contributions of this research is the identification of the factors constituting the intangible assets in the Indian manufacturing organization. It is observed that intangible assets for the competitors are very hard to imitate and this makes the organization to gain sustainable competitive advantage in the market. In an organization intangible asset as defined in the current research is defined by organizational competencies, organizational expertise and organizational experience. These assets are further defined by including components like managerial competencies, technical competencies, marketing, production, research & development, tacit knowledge, problem solving, decision making, risk taking, managerial experience etc. Unlike the tangible assets, these intangible assets may occasionally impact the financial performance of the organization directly; rather they would work

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together thru a chain of factors like managerial competencies would work thru the cause and effect of Cross-Functional groups, leadership teams, change management, creating learning environment offered. The improvement shown would result in customer satisfaction and building internal capacity and enhancing productivity. Thus, it is observed that intangible assets provide potential and sustainable competitive advantage. The significance of these factors, which constitute the intangible assets, is evidently vital to a company's profitability and to the sustainability of its future performance.

RQ#2 Impact of Intangible assets on the organizational performance

The major contribution of this research is the identification of the impact intangible assets on the performance of the organizations and the four perspectives of Balanced Scorecard model, i.e. financial perspective, customer perspective, internal business perspective and learning and growth perspective. Results of this research provide evidence that in order to improve the organizational performance *(ROI, enhancing of bottom line, profitability, higher customer satisfaction index, quality of product, continuous improvement, innovation, improved productivity of employees, improvement in the level of expertise),* Indian manufacturing companies have to emphasis on intangible assets besides the tangible assets.

The research was concluded by using two separate research models 1) to study the impact of organizational competencies *(managerial and technical competencies)* on the organizational performance and 2) to study the impact of organizational experience and organizational expertise on the organizational performance, of the Indian manufacturing industry.

The empirical study indicates that the organizational competencies are not influencing the learning and growth perspective of the Indian manufacturing companies. As per the findings of the study, managerial competencies positively influence the customer perspective and the internal business processes perspective. Wherein, the technical competencies in the Indian manufacturing industry influence the financial perspective and customer perspective. Those organizations that invest in the development and enhancement of intangible assets and put efforts to build these competencies result in better performance outcomes. They are also able to accomplish the requirement of their respective markets and customers. Moreover, at the same time, develop strong internal processes leading to a scenario wherein the organization can have competitive advantage in the market.

This research examines that the organizational experience as an intangible assets impacts all the four perspectives of the organizational performance in the context of Indian manufacturing industry. The significance of the organizational experience is evidently identified and it reflects that the manner organizations work to build up their experience thru different sources directly influences the overall performance and gives an edge in the market. The study on the Indian manufacturing industry also indicated that organizational expertise influences customer, internal business processes and learning and growth perspective amongst the organization performance perspective of balance scorecard.

6. Limitations of the research

The present research is a comprehensive study on studying the impact of intangible assets on the organizational performance, using survey questionnaire having acceptable reliability and validity, a sufficient sample size and sound data analysis. The findings of this research are useful but it has certain limitations as many

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quantitative studies suffer from. The limitations of this study constrain our interpretation of the findings and point to several issues for future research.

- The study was restricted to only Indian Manufacturing Industry due to time constraints.
- In many cases, the respondents were not willing to give honest information on certain items of the questionnaire since they felt that the items are sensitive in nature.
- Since this study was conducted in Indian Manufacturing Industry only, therefore the findings of the study cannot be generalized in global context.

7. Scope for the Future Research

The current study can be extended in many ways, for example to enhance the validity of the results; the data collected through the means of questionnaire can be combined with the secondary data. In addition, the conceptual model can be extended by including more variables that reflects the practices of the Indian Manufacturing companies. Based on the current findings, this study suggests the following future research recommendations for forthcoming researches -

- The current study was conducted in Indian context only; therefore, future research could be done in other geographic areas, cross-countries or cross-cultural to get results from different demographics.
- Research has been conducted on Indian manufacturing industry, and sectors like Information Technology, Engineering, Consulting, Health, FMCG, etc. can be considered for future research.
- The study focused on organizational factors such as organizational competencies, organizational expertise and organizational experience.
- Additional factors such as organizational structure, organizational culture, branding, intellectual capital, workforce diversity, best practices etc. can also be involved for future study.

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HEDONIC AND UTILITARY MOTIVATIONS : A STUDY APPLIED TO WINE CONSUMPTION

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Abstract

Wine is part of history, as a product or as an iconic beverage. It has been the object of studies related to Greek mythology, to the culture of the peoples, to religious values and to contemporary behaviors. It takes a leading role in the history of agriculture, industry, commerce and medicine. It has its trajectory marked by paradoxes, being a product of nature or a product of society, being called the gift of the gods and the work of the devil. Its consumption behavior has stood out in academic and market studies. Considering the evolution and potential of the wine market in Brazil in the last 15 years, the importance of researching on its consumption behavior, specifically on its hedonic and utilitarian motivations, emerges. Therefore, a model was elaborated and tested analyzing the characteristics and the relations between these motivations. In this study, a survey was conducted with a sample of 228 wine consumers in Belo Horizonte, Brazil. The objective was to construct and validate an analytical model, in which two constructs were evaluated : the hedonic motivations and the utilitarian motivations of the wine consumption. The Cronbach's alpha model was 0.94 and the correlation coefficient between the constructs was 0.735. In the factorial analysis four dimensions found for the construct Hedonic Motives show a variance explained 69.73% of the original variability of the data. On the utilitarian motivations two variables explain 63.98 of the variance. The KMO tests and the sphericity test were adequate. Other tests demonstrated the consistency of the model to explain the wine's propensity to consume, as a function of the evaluated constructs. The correlation between the constructs was 0.73, being $p < 0.000$. The regression obtained by the logit function indicated that the model was well adjusted, that is, at a significance level of 5%, it can be concluded that the slopes are homogeneous, and the fit of the model does not improve by releasing the regression coefficients. It was possible to conclude that the hedonic motivations of the wine explain with greater significance the consumption and the propensity to buy, that is, they obtained a greater number of evaluations in agreement, to the detriment of the evaluations of the utilitarian motivations of the wine. The consumer seeks in the consumption of the wine pleasurable sensations, which go beyond the utilitarian motivation. The hedonic consumption proves to be pleasurable, and the consumer searches for experiences that can provide values and sensations beyond their utilitarian consumption. Thus, several attributes evaluated determined a greater orientation to hedonism, such as the engagement with its ancient history, its castes, terroirs, the charming producing regions, the relations between wine and rituals and the relations between wine, power and even seduction. In this sense, the potential for significant evolution of the studies in the context of hedonic and utilitarian motivations as well as the anthropological, social, economic and neuroscientific conditions of wine consumption is verified. This study provided conditions for the proposition of several hypotheses for future studies.

Keywords: Hedonism and Utilitarism; Wine; Wine consumption; Consumer; Sensory analysis

1 Introduction

Wine is part of history as a product, or a significantly iconic beverage. Throughout its existence was object of study linked to the Greek mythology, to the culture of the people and to religious values. It also has a leading role in the history of agriculture, industry, commerce and medicine (Phillips, 2003). Wine has its trajectory

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marked by paradoxes, being a product of nature or a product of society, acquired by low prices or exorbitant values, having been called the gift of the gods and the work of the devil.

Since the 1970s, the world of wine has undergone several modifications. There is a discrepancy between what is called Old World, which carries a traditional history in production and consumption, and New World, generally with wines produced outside Europe, such as the United States, Australia, Chile, Argentina and other countries. This phenomenon intensified with the globalization of the wine market, which allowed the production of a certain locality to be transported to any other, and the context favorable to the wines of the New World.

In Brazil, currently some new wines, already compete with foreigners of good reputation. It is a relevant socioeconomic activity, especially for the southern states of the country. The country has established itself as the fifth largest producer of the beverage in the Southern Hemisphere, with more than 1,100 wineries. The opening of Brazil to foreign markets boosted the consumption of fine wines among the middle class. Although Brazilian winemaking has experienced an increase in production in recent decades, and consumption has grown strongly (sixteenth in the world), most of the consumption is still wine from other countries (Ibravin, 2017). In order to understand this contradiction it is necessary to understand the symbolic meaning of the product. In some cases the cognitive component may be predominant, in others the affective component, or both can relate, going beyond the functional and utilitarian characteristics of a product (Santisi et al., 2018).

The central role of marketing organizations and practitioners is to identify, understand and predict the motives that influence consumer buying and experience (Bueron et al., 2014). In the case of wines, the tendency is to present the brand names, especially in wines produced in the New World. However, there are other factors that influence the purchase, such as the country of origin, harvest year, type of grape and price (Schäufele, et al., 2018). Hirschman and Holbrook (1982) pioneered studies on the hedonic dimension of consumption. They described that in general, hedonic consumption is relevant in the affective, emotional and fantastical point of view in people, being responsible for pleasure and excitement and has symbolic and experimental meanings of consumption, as opposed to utilitarian consumption, which is primarily guided by goals. It is possible to characterize the experiences of the society of consumption by different traits, among them: moral, hedonistic and materialistic, elevation of the standard of life, abundance of goods, worship of objects and leisures (Lipovetsky, 1989). Products have their intrinsic hedonic and / or utility value. Thus consumers develop different levels of hedonic and / or utility purchase value.

The present work aims to investigate the hedonic and utilitarian attributes of wine consumption in the Brazilian scenario. Thus, one wonders: at what level do the hedonic and utilitarian motivations influence wine consumption? The general objective of this research is to analyze the influence of the hedonic and / or utilitarian attributes that motivate the wine consumer. As specific objectives, it is intended: 1) to identify the profile of wine consumers; 2) to estimate the influence exerted by the hedonic motivations and by the utilitarian motivations in the consumption of wines; and, 3) to correlate the hedonic and utilitarian motivations of wine consumption and to identify the salience of motivations for wine consumption.

2 Theoretical references

2.1 On wine, its history in Brazil and the markets

Wine takes place in several types of stories, but its origin is enigmatic. It has already been considered a miracle of nature. It is a beverage resulting from alcoholic fermentation, totally or partially, by the intervention of technological processes, being the result of a natural process of fermentation, that is, each grape acts as a mini-vine. The chemical elements of wine are all found within the grape itself in its shell. In the pulp contains water, sugar and pectin. The bark in turn stores the tannin, the yeast and the pigment that provide the color to the wines (Phillips, 2003). But the manufacturing process only evolved with the intervention of man. The grapes

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began to be cultivated, selected and fermented. Fermentation was controlled to achieve specific flavors.
In the early 1990s, there was an increase in the competition between what is conventionally called Old World and New World wines (Lucki, 2010). The characteristics of the wines between old and new worlds are totally different. Old World wines show tradition in production, bearing commercially strong names. In the New World wines, as is the case of the producers from Australia, the United States, Argentina, Chile, South Africa, New Zealand and Brazil, the main characteristics basically were to demonstrate the label highlighting the grape, instead of the region, which does not imply memorizing various names from which the wines come, and in the production they adopted new techniques, allowing the immediate consumption of the wine. The final quality of the wine is determined by the vineyard and the winery, notably the environment and agricultural culture. The environment is all local nature properties, also terroir - the French language, and encompasses climate, soil and water flow. The main fruit for the production of wine, by innate conditions, is the grape. The juice of the grape has all the necessary ingredients to make the wine, and its high concentration of sugar provides the alcoholic fermentation, inhibiting the microbial action. It is estimated that in the world there are between 10,000 and 14,000 varieties of grapes, also called strains or grape varieties. The high number is justified by the variability in the form of growth, appearance and flavors, in addition to the possibility of clones strains. The literature shows the most abundantly cultivated grape varieties in the world.

2.2 On the dimensions of consumption: hedonic and utilitarian

Studies of consumption have their origins in economics, in the theories of classical economists. The principle of the study was the rationality, that explains that the decisions of the consumers are rational, from the evaluation of the utility of the products. Nowadays the consumers have been explaining that not only rational stimuli but also emotional and symbolic stimuli describe consumer behavior. The subjectivity of consumers is justified by the diversity of purchase options (Bauman, 2008). These motivations can lead consumers, from the state of enchantment to the state of anger, or even revenge, with products purchased (Lara et al., 2017). Needs are innate (physiological), or acquired (psychogenic) needs, considered secondary, arising in response to culture or the environment (Greenfeld & Liah, 2017). Consumers with high levels of involvement are better able to differentiate wine quality through an assessment of intrinsic attributes and thus become less price dependent (Gvili, & Levy, 2017 Santisi et al., 2018 and Roe & Bruwer (2018).
The term hedonism originates from the Greek language - hedonism, or the propensity to seek pleasure and the free will to feel good. Thus, the term refers to pleasure as a supreme sensation of human life. Pleasure determines happiness, or the meaning of life. Thus, hedonism seeks out other sensations, such as balance and serenity to achieve happiness. Several philosophers, throughout the history of philosophy, have been presenting their contributions in the sense of describing and explaining hedonism. In this context, the era of sensorial or experimental marketing is now consecrated, highlighting the feelings of pleasure and happiness provided by consumption. Thus, the consumer society is characterized by the constant reconfiguration of consumer needs, with increasingly seductive and almost irresistible proposals. On the relationship between wine and hedonism, more and more intensely literary contributions have emerged that effectively enrich knowledge in this field. In short, Tong & Su (2018) emphasize pleasure as the foundation of hedonic consumer motivation, not the temporary pleasure of enjoyment as an end in itself, but a pleasant sensation derived from the imaginative use of products and services seen and desired in stores, shop windows and advertisements. Happiness and pleasure, in this logic, are conditioned by objective efforts and gains. In this perspective, the utilitarian view is simpler than that of hedonism. The utilitarian view is more consistent and defined in the consciousness of the observer, whereas hedonistic logic implies the exploration of elements that, in addition to the conscious, refer to the more present perceptions in the synaesthetic context about the individual's values (O'Curry & Strahilevitz, 2001). Human food, and its rituals, processes, and components are rich experiences

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with the precepts of hedonism and utilitarianism. They allow to observe the shades from the most obvious to the most obscure of the hedonic and utilitarian contexts. From the organoleptic properties to the consumption motivation, objective and subjective elements interact in the hedonic and utilitarian logics.

2.3 On the sensorial dimension of wine

Sensory analysis occurs in responses transmitted by individuals to the various sensations that arise from reactions of the body and mind, and which are interpreted from the properties intrinsic to the products. For this it is necessary that there be contact and interaction between the parties, individuals and products (Palermo, 2015). The characteristics of the composition of a food, such as wine, help the individual decide on consuming it, but as mentioned above, the main factor is the result of the interaction between the individual and the product. In the sensory dimension, the characteristics of the food, such as texture, color, taste, nutrients, preparation, price, seasonality and individual characteristics, such as life cycle, gender, culture, economic conditions and personality. Food assessment is based on sensory stimuli received by the human senses in contact with the environment. They are the five senses, the vision, the smell, the taste, the hearing and the touch, responsible for connecting the individuals to the world. The combination of information that is captured through the senses is transmitted to the brain, coded from beliefs and values, and stored in memory (Cayuela et al., 2011). Since no instrument can replace the human senses, sensory analysis through these unique measurement parameters is widely used in the food industry to understand consumer behavior, Beckert et al. (2017). In the case of consumption of alcoholic beverages the social aspect is evident. The act of drinking, besides pleasure to the palate, adopts the symbolism of fraternizing. In recent years, even in health and aesthetic treatments the drink is used. With the discovery of the polyphenols in the grapes, the wines started to make rejuvenating creams, moisturizers, oils, exfoliants and soaps (Rössel et al., 2016). The senses, together, emphasize the experiential dimension of taste, from the first aromas that emerge in the ritual of serving the drink (Smith, 2006). Taste is considered as mixed experiences, but at the same time unitary olfactory, gustatory, tactile, thermal and kinesthetic sensations perceived during the act of tasting. A close examination shows that wine tasting is important, but individual belief may impact even more than taste itself (Smith, 2006).

2.4 Theoretical model of the research

In accordance with the purposes and processes of this research, a model has been adopted whose analytical elements configure in the logic of the constructs hedonistic motivations and utilitarian motivations of the consumption of wine. The variables consist of the elements, or factors, that explain the constructs, as shown in Figure 1.

Hedonic motivations of wine consumption	Utility motivations of wine consumption

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• With wine, I feel more pleasure in living. • Appreciating wine brings me closer to the fullness of my taste. • When I enjoy wine, I feel special. • I always drink wine, as self-gratification for my efforts in life. • When I am sad, if I drink wine, I feel better. • For me, enjoying wine relieves stress. • I am a good wine expert. • I always deserve to taste good wine. • Asking for a wine is always an adventure: I do not know almost all the brands. • Finding a wine, for me, is always stimulating. • When visiting a wine store, I feel myself entering a known universe. • I like to rely on the advice of friends and sommeliers. • I like to present people with wine, because if they feel good, I feel good. • I like to give family and friends wine. • I spend great time choosing wine for gift.	• More often than not I buy wine when it comes to promotions. • I buy wine over the internet because they are cheaper. • I choose the wines well and I feel very good. • Buying wine online I value up to the expectation of arrival. • I like to share with family and friends the process of buying wine, in physical stores and on the internet. • Buying and tasting wine, for me, is a relevant social event. • I enjoy living intensely the experience of buying and tasting wine. • I like to study the production and distribution of wine. • I enjoy experiencing the launches and opportunities. • I prefer to try wine by country of origin, I appreciate the traditional regions in wine production. • I like to study the history and geography of wines, enhancing my culture in this theme.

Figure 1 - Analytical model of research, 2018

In summary, the evaluation of the two constructs: "hedonic motivations" and "utilitarian motivations" of wine consumption constitute the essence and the investigative purposes as exposed in the evaluative model.

3 Methodological procedures

A study of exploratory and descriptive nature was carried out, characterizing itself as a survey. The methodological procedures met the requirements and rigors of multivariate statistics, with a sample of 228 respondents from the city of Belo Horizonte, collecting the data in August and September 2018. A structured and non-disguised questionnaire was developed in the Likert format with (1 - I strongly disagree, 2 - I strongly disagree, 3 - I disagree, 4 - I do not agree, I do not disagree, 5 - I agree, 6 - I agree a lot, 7 - I agree completely. It has been applied through Google Forms. The first fifteen questions refer to the "hedonic motivations of wine consumption" construct. The eleven following questions relate to the other construct "utilitarian motivations of wine consumption", followed by a question-synthesis of the propensity to consume wine.

The explanation of the propensity for wine consumption was obtained by the function below:

$Yc = \alpha + B1MH + B2MU + ui$, where:

Yc = general motivation for wine consumption.

α = constant.

B1 = estimator of hedonic motivation.

MH = index of hedonic motivation.

B2 = estimator of the utilitarian motivation.

MU = index of utility motivation.

ui = adjustment factor.

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4 The empirical results

4.1 General data of the respondents

The research was performed with 228 respondents, 121 of the male gender and 107 of the female. 56.9% are between the ages of 20 and 60, and 68% have income between five and ten minimum wages. 44% consume wine eventually, 31% weekly and 19.3% monthly.

4.2 Analysis of dispersion of variables

The dispersions of the variables of the constructs hedonic motivations and utilitarian motivations of the wine consumption are presented in Tables 1 and 2.

Table 1 - Scatter analysis of the hedonic variables of wine consumption

Hedonic motivations	Average	Standard deviation	Curt -ose	Coefficient of variation
With wine, I feel more pleasure to live.	4.18	1.681	-0.36	40.22%
Appreciating wine brings me to the fullness of my taste	4.33	1.531	-0.04	35.37%
When I appreciate a wine, I feel special.	4.22	1.663	-0.45	39.37%
I always drink wine, as self-gratification for my efforts in life	3.85	1.763	-0.83	45.84%
When I'm sad, if I drink wine, I feel better.	3.76	1.800	-0.83	47.82%
For me, enjoying wine relieves stress.	4.96	1.654	0.19	33.33%
I'm a good wine expert	3.25	1.720	-0.88	52.84%
I always deserve to taste good wine.	4.82	1.838	-0.34	38.10%
Asking for a wine is always an adventure: I do not know almost all the brands.	4.37	1.904	-1.02	43.55%
Looking for a wine, for me, is always stimulating.	4.42	1.660	-0.29	37.55%
When visiting a wine store, I feel myself entering a known universe	3.82	1.795	-0.90	46.99%
I like to trust the advice of friends and sommeliers.	5.31	1.497	1.18	28.19%
I like to present people with wine, because if they feel good, I feel good	4.68	1.660	-0.24	35.47%
I like to give family and friends wine	4.67	1.752	-0.44	37.54%
I devote great time to choose wine for gift.	3.27	1.640	-0.61	50.20%

The question "I am a good expert in wine appreciation", assumed a coefficient of variation of 52.84%, being the most heterogeneous of the construct, indicating that on average, the deviations from the average amount to 52.84% of the value of the latter. However, "I like to rely on the advice of friends and sommeliers" more homogeneous with a variation of 28.19%, indicating that on average, deviations from the average amount to 28.19% of the value of this. The affirmatives have averages between 3.25, "I am a good expert on wine appreciation", and 5.31, "I like to trust the nominations of friends and sommeliers".

Table 2 - Analysis of dispersion of the utility variables of wine consumption

Utilitarian motivations	Average	Standard deviation	Cur-tose	Coefficient of variation
Most often I buy wine when they are on promotions	4.44	1.868	-0.98	42.05%
I buy wine over the internet because they are cheaper.	3.14	1.906	-0.90	60.59%
On the internet I choose wines well and feel very good	3.14	1.907	-0.98	60.73%
Buying wine online I value up to the expectation of arrival.	2.90	1.729	-0.43	59.64%
I like to share with family and friends the process of buying wine, in physical stores and on the internet	3.04	1.744	-0.81	57.39%
Buying and tasting the wine, for me, is a relevant social event	3.97	1.739	-0.77	43.82%
I love to live intensely the experience of buying and tasting the wine.	3.88	1.757	-0.80	45.31%
I like to study the production and distribution of wine	3.19	1.788	-0.94	55.99%

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I like to experience the launches and opportunities	3.83	1.830	-1.02	47.80%
I prefer to try the wine by country of origin, price for the traditional regions in wine production	4.29	1.822	-0.72	42.43%
I like to study the history and geography of wines, enhancing my culture in this theme	3.39	1.821	-0.97	53.63%

The question "on the internet I choose wines well and I feel very good", assumed a coefficient of variation of 60.73%, being the most heterogeneous of the construct, indicating that on average, deviations from the average reach 60.73% of the value of this. The question "most often I buy wine, when they are in promotions" is the most homogeneous with a variation of 42.05%, indicating that on average, deviations from the average amount to 42.05% of the value of this. The affirmatives have averages between 2.90, "buying wine on the internet I value up to the expectation of the arrival", and 4.44, "More often I buy wine, when they are in promotions". The perceptual conjunction of the hedonic and utilitarian attributes of wine consumption is shown in table 3.

Table 3 - Dispersion of the synthesis of hedonic and utilitarian perceptions

Perceptual conjunction of wine consumption	Average	Standard deviation	Curtose	Coefficient of variation
In short, I really enjoy wine, it gives me a good personal experience, integrates me into the social environment, I look for more economical wines and I get more culture when I consume it.	4.56	1.803	-0.49	39.57%

The general question has a coefficient of variation of 39.57% with an average of 4.56 and a standard deviation of 1.803. The coefficient of variation is close to recommendations in studies of a social nature. The reliability of the model, measured by the Cronbach's alpha is 0.939, considered above the minimum desirable value, which according to the literature.

4.3 Factor analysis

The factorial analysis of variables was performed using the Varimax method for each of the constructs, to verify how many factors would be needed to explain the model. Unidimensionality was not confirmed, since its indicators presented a factorial load in four dimensions. The four dimensions found for the construct "Hedonic Motivations" are formed by the questions:

1- With wine, I feel more pleasure in living; Appreciating wine brings me to the fullness of my taste; When I appreciate a wine, I feel special; I always drink wine, as self-gratification by my efforts in life; When I am sad, if I drink wine, I feel better; For me, enjoying wine relieves stress.

2 - I like to present people with wine, because if they feel good, I feel good; I like to give family and friends wine; I devote great time to choose wine for gift.

3 - I am a good wine expert; I always deserve to taste good wine; Looking for a wine, for me, is always stimulating; When visiting a wine store, I feel myself entering a known universe.

4- Ask for a wine is always an adventure: I do not know almost all the brands; I like to trust the advice of friends and sommeliers.

The four dimensions found for the construct are formed by the fifteen questions of the construct. With this, there is a variance explained 69.737% of the original variability of the data. The KMO and the sphericity test were adequate.

Regarding the utilitarian motivations of wine consumption, unidimensionality was not confirmed, since its indicators presented a factorial load in two dimensions. The two dimensions found for the construct are formed by the questions:

1- I like to share with family and friends the process of buying wine, in physical stores and on the internet; Buying and tasting the wine, for me, is a relevant social event; I like to live intensely the

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experience of buying and savoring the wine; I like to study the production and distribution of wine; I enjoy experiencing the launches and opportunities; I prefer to try the wine by country of origin, price by the traditional regions in wine production; I like to study the history and geography of wines, enhancing my culture in this theme.

2- More often I buy wine, when they are in promotions; I buy wine over the internet because they are cheaper; On the internet I choose wines well and feel very good; Buying wine on the internet I value up to the expectation of arrival.

The two dimensions found for the construct are formed by the fifteen questions of the construct. With this, there is a variance explained 63.987% of the original variability of the data. The KMO and the sphericity test were adequate.

Aiming to identify the valence and saliency of the possible relation between the constructs under study, the procedure of contrast between them was elaborated, and the results are shown in Table 4.

Table 4 - Correlation of constructs hedonic motivations and utilitarian motivations

Consumer motivations of wine		Hedonic Motivations	Utilitarian Motivations
Hedonic Motivations	Correlation	1	0.735**
	P-value		0.000
Utilitarian Motivations	Correlation	0.735**	1
	P-value	0.000	

**. The correlation is significant at the 0.01 level

The Pearson correlation was used, and the constructs presented a correlation of 0.735. All the correlations indicated by (**) were significant considering an alpha of 1%, that is, the correlations between the constructs are different from zero.

4.4 Pictorial expressions of hedonic and utilitarian motivations

The pictorial expressions of the constructs and variables of the model are presented in figures 2 and 3

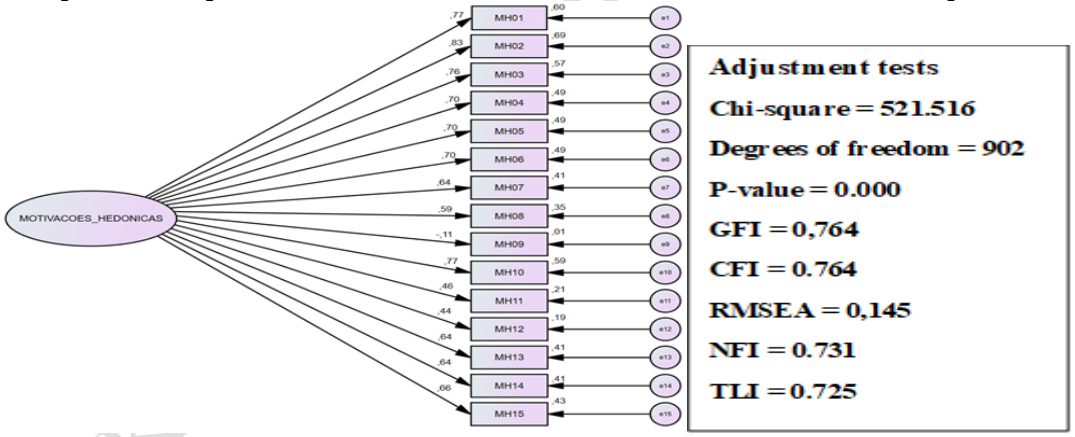

Figure 2 - Pictorial expansion of hedonic motivations.

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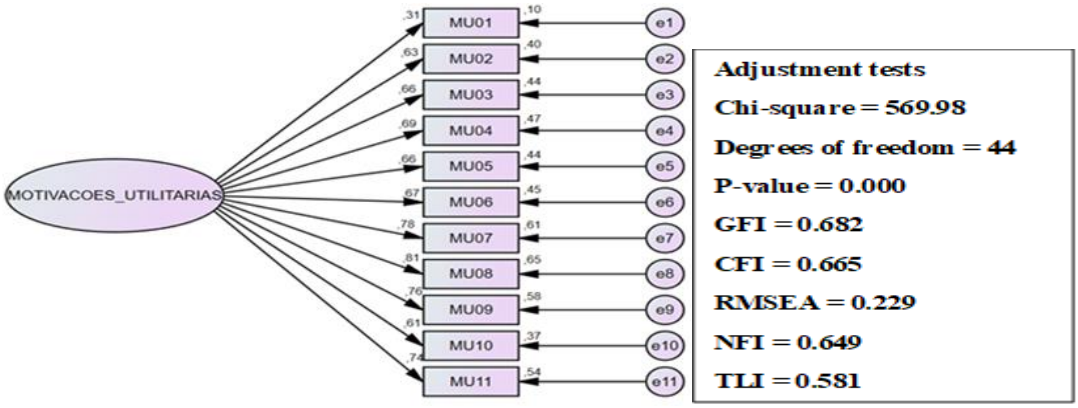

Figure 3 - Pictorial Expansion of Utility Motivations

4.5 Regression of the hedonic and utilitarian constructs

For the regression model, seeking to identify the valences and protrusions of the constructs, the average of the questions of each construct as independent variables was used, and as a variable answer the question "In summary, I really like to appreciate the wine, it gives me a good personal experience, integrates me into the social environment, I look for more economical wines and I get more culture when I consume it ". The response variable is of the categorical ordinal type polytomy, so the model used is the ordinal logistic model. The link that got the best fit was the logit.

$$logit = ln\left[\frac{P(Y\leq k|X)}{P(Y>k|X)}\right] = \alpha_k + \beta X_j \ \ (j = 1, \dots, n; k = 1, \dots, k-1) \quad (1)$$

Where αk represents the location parameter for the k = 1, ..., k - 1 classes of the dependent variable, β is the regression coefficient vector and Xj is the matrix of the independent variables.

In the case of the Link function being logit, taking the inverse of the logit function, it is possible to define the generic function of the accumulated probability (logistic distribution function) of class k:

$$F(\alpha_k - \beta X_j) = P[Y \leq k] = \frac{1}{1+ e^{-(\alpha_k - \beta X_j)}} \quad (2)$$

To test the significance of the adjusted model we use the likelihood ratio test between the null model (without any independent variable) and the complete model (with all the independent variables). If the adjusted model is not significant, it is not possible to predict the probability of each class of the dependent variable from the independent variables of the model.

H0: The model is not statistically significant.

H1: The model is statistically significant.

The test to check if any of the constructs influences the response variable is presented in Table 5.

Table 5 - Template adjustment information

Model	(-2 Log) probability	Chi square	Degrees of freedom	P-value
Intercept only	820.89			
Final	657.72	163.17	2	0.000

Since the p-value is equal to 0.000, one can conclude, at a level of 5% of significance, that some of the questions influence the response variable. The following two tests are significant at a significance level of 5%. Therefore, the model was well adjusted, that is, it can be said that the data were well adjusted to the model (Table 6).

Table 6 - Adjusting the model

	Chi-square	Degrees of freedom	P-value
Pearson	1064.09	1258	1.000
Deviance	643.86	1258	1.000

The Pseudo-R2 evaluates the size of the model effect, calculated by Cox and Snell never reaches the value 1,

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even when the fit is perfect. The Nagelkerke's is the Cox and Snell coefficient corrected, so it reaches 1 when the fit is perfect (Table 7).

Table 7 - Pseudo R-Square

Cox and Snell	0.511
Nagelkerke	0.525
McFadden	0.195

The pseudo R-squared is a measure that ranges from 0 to 1, and the closer to one, the better the fit of the model. The first two indices were medium. McFadden's pseudo-R2 says that the adjusted model gains 19.5% more information than the null model. To identify which independent variables significantly influence logit, the Wald test is usually used (table 8). In this test we intend to verify if a given coefficient is null conditioned by the estimated values of the other coefficients.

Hedonic motivations (MH): average of the questions from "F" to "T".

Utility Motivations (MU): average of questions from "U" to "AE".

The question "In short, I really enjoy wine, it gives me a good personal experience, it integrates me into the social environment, I look for more economical wines and I get more culture when I consume it", has 7 classes as an answer. Therefore only 6 are used to estimate the probability of the input, because the function that calculates the probabilities to be cumulative, it is not necessary to estimate for all the answers.

Table 8 - Estimation of model parameters

		Estimate	Default Error	Wald	Degrees of freedom	P-value	Interval	
							Inferior limit	Upper limit
Input (α_k)	[Answer = 1]	3.189	0.562	32.170	1	0.000	2.087	4.291
	[Answer = 2]	3.855	0.572	45.409	1	0.000	2.734	4.977
	[Answer = 3]	4.734	0.597	62.821	1	0.000	3.563	5.905
	[Answer = 4]	6.306	0.657	92.102	1	0.000	5.018	7.594
	Answer [= 5]	7.873	0.715	121.339	1	0.000	6.472	9.274
	[Answer = 6]	9.179	0.761	145.460	1	0.000	7.688	10.671
Location	Hedonic Motivations (HM)	0.615	0.171	13.024	1	0.000	0.281	0.950
	Utilitarian Motivations (UM)	1.077	0.155	48.559	1	0.000	0.774	1.381

The dependent variable has 7 classes, so the model has 6 entries (αk). Generally, these entries are only used for calculating probabilities, and in addition to this use, your interest is small. The slope estimates (regression coefficients) are used to infer the significance of the independent variables on the probabilities of the classes of the dependent variable (strictly on the Link of the accumulated probabilities). The Logit function was used, the model can be written as:

$$P[Y \leq k] = \frac{1}{1 + e^{-(\alpha_k - [MH(j) + MU(i)]}}$$

The ordinal regression model used assumes that the influence of the independent variables on the link (in this case logit) is the same for all classes of the dependent variable. To test this assumption, the likelihood ratio test statistic of two ordinal models is used, the first assuming that the slopes are equal and the second assuming that they may be different (Table 9).

H0: the slopes are homogeneous.

H1: Slopes are not homogeneous.

Table 9 - Test of parallel lines

Model	(-2 Log) probability	Chi-square	Degrees of freedom	P-value
Null hypothesis	657.720			
General	647.964[b]	9.756	10	0.462

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At a significance level of 5%, it can be concluded that the slopes are homogeneous, that is, the fit of the model does not improve releasing the regression coefficients. Soon the model was well adjusted with the logit function.

5. Conclusion and final considerations

This study, based on theoretical bases and methodological foundation, was defined in a quantitative descriptive research, with the application of 228 questionnaires - in the period between August and September 2018, which provided bases to fulfill the objective of the research, "to analyze the influence of the hedonic and / or utilitarian attributes that motivate the consumer of wines in Brazil. " As well as meeting its specific objectives: "Characterize wines produced in Brazil"; "Identify the profile of Brazilian wine consumers"; "Identify the hedonic motives and utilitarian motivations to choose wines"; "Correlate the hedonic and utilitarian motivations of wine consumption"; "Identify the salience of motivations for wine consumption".

The objective of the study was to validate the analytical model elaborated, in which two constructs were evaluated: the hedonic motivations of wine consumption and the utilitarian motivations of wine consumption. A general question was also defined, in order to identify the synthesis of the sensations provided by wine consumption.

In general, the hedonic motivations of wine obtained a greater number of evaluations in agreement, in detriment to the evaluations of the utilitarian motivations of the wine. Hedonic consumption proves to be pleasurable, so the consumer looks for consumer experiences that can provide beyond the utilitarian acquisition of products. Wine is essentially two-dimensional, the two dimensions of which dictate behavior in the wine-buying process. However, it has a range of attributes that provide a greater orientation to hedonism - one can mention from its ancient history, its castes, terroirs, the charming producing regions, relations between wine and rituals, relations between wine and power.

On the results, according to the statistical frequency distribution it was possible to filter opinions. Among the majority of respondents, it is noteworthy that wine provides more enjoyment in life, feels special, approaches the fullness of the palate and relieves stress. Of the respondents, 62.29%, also believe that they deserve to taste good wine. Although more than half (53.07%) recognize that they do not understand wine well, and 52.20% said they did not know almost all brands. This indicates the incipience of the Brazilian consumer market in relation to consumers in other countries. Although Brazilian production and its consumer market have been performing well in the last 15 years.

In the factorial analysis of the variables, we used the Varimax method, which is an orthogonal rotation method. Four variables of the hedonic motivations were detected, which presented a variance of 69.737% of the original variability of the data. On the utilitarian variables, two variables of the utilitarian motivations were detected, with a variance of 63.987% of the original variability of the data. Through the function of regression of the constructs, the degree of contribution of each one to characterize the motivations of wine consumption was indicated.

In order to enable the elaboration of the regression function of the analytical model of wine consumption, due to the hedonic motivations and the utilitarian motivations, it was necessary to formulate the synthesis question, which expresses this propensity. For the regression model, the average of the questions of each construct was used as independent variables, and as a variable response to the question "In summary, I really enjoy wine, it gives me a good personal experience, integrates me into the social environment, I seek wines and acquire more culture by consuming it ". The response variable is of the categorical ordinal type polytomy, so the model used is the ordinal logistic model. In this way, the information detected by the research is reliable and in line with the theory used. It is hoped that this study may aid in new studies on wine in the Brazilian market and its

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consumers.

5.1 Propositions for future studies

For the contribution to the evolution of the studies in this field of the characterizations of the hedonic and utilitarian motivations of the wine consumption, from this study the following hypotheses are proposed for future studies:

H1: The hedonic motivations of wine consumption are more salient in the female than in the male consumers;

H2: The hedonic motivations of wine consumption are more salient in high-income consumers than in low-income consumers;

H3: The hedonic motivations of wine consumption are more salient in consumers in the higher age group than in the younger ones;

H4: The hedonic motivations of wine consumption are more salient in consumers with a higher educational level, than in consumers with low schooling;

H5: It is possible to validate a model that contrasts valence and saliency between the hedonic and utilitarian motivations of wine consumption;

H6: Hedonic motivations predominate significantly over the utilitarian motivations in the propensity to consume wine;

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