

IMPACTS OF INNOVATION ON SMALL BUSINESSES IN VALE DO RIO DOCE, MINAS GERAIS, BRAZIL

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ABSTRACT

Highlights: The implementation of innovation in small businesses; the regional development of eastern Minas Gerais; the growth of business profits in various segments; the success of small businesses.

Aim: Check the first results of innovation during the Local Innovation Agents Program at Vale do Rio Doce in Minas Gerais, Brazil.

Design/Methodology/Approach: The Radar of Innovation scores were obtained from small companies served by the Program of the cities of Governador Valadares, Colonel Fabriciano, Ipatinga and Timóteo, from 2015 to 2017.

Results: Companies have generally been successful in relation to the innovation proposed by agents between cycle 0 and cycle 1 of the Radar of Innovation. It was a great challenge to adapt companies with more time to the new habits of consumers, since one of the innovations proposed was the insertion of companies in social networks.

Limitations of research: The questions that were part of the questionnaire applied to the companies were those provided by the Radar of Innovation, for cycles 0 and 1 of the Program, from a total of five cycles. It is therefore recommended that new questions adapted to the other cycles be drawn up.

Practical Implications: The adoption and practice of after-sales with customers by small businesses, with none adopting this activity as a standard procedure, as observed in cycle 0, before joining the Program.

Originality/value: This study sought to demonstrate the capacity of small businesses to resist the economic crisis and bring positive results to the economy through innovation and their insertion in social networks, according to their scores obtained.

Keywords: Social media; Marketing; SEBRAE; East mining.

1. INTRODUCTION

The small entrepreneur's vision is fundamental for the success of his own company, especially when it comes to providing services. The constant search for innovation processes, as well as the gains from innovation itself, must be paramount in an effective and dynamic economic structure. The Brazilian position in the last ranks of a world innovation ranking shows that the country needs greater stimulus and investment (Nunes, 2017).

Currently, in the digital age, the entrepreneur needs to look for methods and ways to excel, besides the challenge of adapting to the market itself. According to Chiavenato (2009), this era is constantly evolving and organizations need to follow this movement. For this, changes in the market, which has become increasingly dynamic and competitive, are indispensable.

In recent years, Brazil has been facing a serious economic crisis, which has led small entrepreneurs to innovate in their companies to face the fierce competitiveness faced in their daily lives. This work of innovation should be requested, by the small and medium businessman, as a way to remain in their business, promoting their growth and performance in the local economy.

Innovation is an important success factor for business. According to Simantob (2017), innovation is essential for companies to survive in the competitive and globalized market. This statement is reinforced by the Oslo Manual (OECD/FINEP, 2007), according to which companies use this tool to ensure their current competitive position, in addition to seeking new advantages in relation to the market.

Micro and small enterprises (MSEs) are strongly impacted by new market demands, despite representing a significant share in the world economy. These companies have little capacity to withstand damage from ineffective innovations, in addition to limited internal competence for research and development of new technologies (Silva and Dacorso, 2014).

On the other hand, innovation becomes critical because it requires financial efforts from MSEs, such as high costs, difficult access to financing lines and deficient demand. There are also specific factors, such as the lack of specialized personnel, less access to sources of information on technology, less flexible organizational charts, little political power and a smaller physical structure; and legal factors, such as regulations and tax rules (Silva and Dacorso, 2014; Paulla and Hamza, 2015).

Brazil ranks 100th (out of 139) in the Innovation pillar, according to the global competitiveness report of the World Economic Forum (WEF), 2016/2017. This is a reflection of

the insufficient stimulus-investment axis, both necessary for an innovation to go beyond the limit of utopia (Nunes, 2017).

In this context, the actions of Local Innovation Agents (ALI, in Portuguese) of the Vale do Rio Doce Regional are indispensable in solving problems, using the Radar tool for Innovation in Companies (Bachmann and Destefani, 2008). These agents seek the economic success of the companies served by the ALI Program, and it is necessary to understand the internal processes of companies and how they relate to their customers, and the implementation of the concept of innovation in their daily lives.

The role of the agents is fundamental for the Vale do Rio Doce region, which presents great economic importance, since it comprises cities that contribute significantly to the industrial and agricultural production of Minas Gerais and are one of the main consumer markets: Governador Valadares, Ipatinga, Coronel Fabriciano, and Timóteo (Ferreira *et al.*, 2012). In the ALI Program, local innovation agents work alongside companies for a period of 30 months: they perform diagnoses, employ their own methodology, such as the creation of a SWOT matrix, and implement action plans focused on innovation (SEBRAE, 2016). After this period, companies are expected to be able to carry out and manage their own innovative activities without the presence of the agent.

Therefore, the objectives of this work were: to present the evolution of innovation from cycle 0 to cycle 1, during the validity of the ALI Program in the period 2015-2017; and to verify the impacts on the MSEs attended, as a result of the action of the ALI in the Vale do Rio Doce Regional.

2. METHOD

The work was carried out between September 2015 and March 2017, a period in which 20 agents worked at the Vale do Rio Doce Regional, in Minas Gerais. The Regional comprised the cities of Governador Valadares, Coronel Fabriciano, Ipatinga and Timóteo.

The focus of the research was the 20 companies that each ALI followed, totaling 400 companies of the Vale do Rio Doce Regional, out of a universe of 1,600 that were attended by the Program in this period. These companies belonged to the following segments: food and beverages; automotive; health, beauty and well-being; civil construction and housing; fashion and metalworking. Only cycle 0 and cycle 1 (of five cycles that made up the ALI Program) were used in this work.

The data collection tool used was the Radar of Innovation, focusing on its 13 dimensions (Bachmann and Destefani,

2008; SEBRAE, 2015): offer, platform, brand, customers, solutions, relationship, adding value, processes, organization, supply chain, presence, network, and innovative environment. From these dimensions, the innovation ability of each company was measured through the creation of the Radar of Innovation, from the average score of each dimension of innovation, and obtained through the answers of 42 questions, resulting in a metric to measure the degree of innovation. Each question was a set of statements that accepted “yes” or “no” as the answer and pointed out three situations (Cardoso, 2014): innovation is present in the company (score 5); innovation is incipient (score 3) or; the company does not present innovation (score 1).

Then, the average obtained in each dimension of each segment in cycle 0 and cycle 1 was calculated, and considered the information about the company’s performance time and its number of employees, both based on questionnaires applied by the agents themselves with the companies.

3. RESULTS

The MSEs from eastern Minas Gerais participating in the 2015-2017 ALI Program presented different results in terms of time and number of employees (Figure 1). The civil construction sector presented the longest average time of performance, with 13.1 years, followed by the health and metalworking sectors, with 12.4 and 12.1 years, respectively; the food sector, characterized by bars and restaurants, presented the shortest time: 10.3 years. The Rio Doce Valley also encompasses the Steel Valley, an industrial hub with great circulation of people (Ferreira et al., 2012), which may have influenced the time of action of the companies, since the regional program has a long history in this ecosystem since the 1960s.

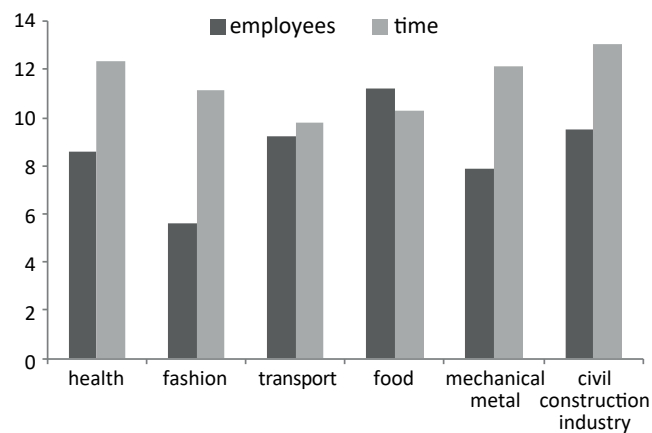


Figure 1. Average number of employees and average time of operation of companies participating in the Vale do Rio Doce Regional ALI Program, MG.

Source: The author.

Food companies are the most influenced by the seasonality of trade, since they are a reflection of the willingness of the population to seek food inside and outside the home, which may explain their higher number of employees. It can be stated that the age of the company is directly correlated with its consolidation in the market and the number of employees, because the longer the market time, the greater will be its stability and return on capital, reflecting the possibility of hiring and maintaining employees. According to IBGE (2014), of every ten companies, six do not survive after five years of activity. These data are indicative that the companies analyzed can be considered solid, since they have already exceeded the average age at which most companies close.

Health, beauty and well-being segment

In cycle 0, the health, welfare and beauty segment presented 11 dimensions with scores below 3.0 (the company does not present innovation), excluding only the offer and brand dimensions (Figure 2). The supply dimension score was equal to 3.0, which can be explained by the fact that one of the main groups of companies in this segment, the drugstores, is always launching new products.

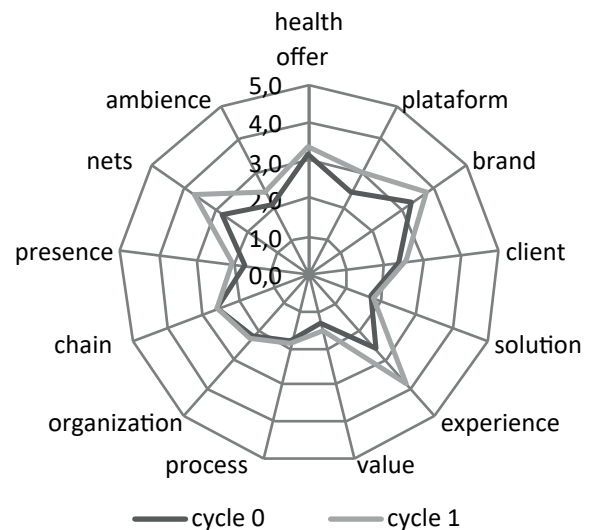


Figure 2. Radar Dimensions of Innovation of companies in the health, beauty and well-being segment of the Regional Vale do Rio Doce, MG.

Source: The author.

In Cycle 1, it is interesting to observe the dimensions of customer experience and offer, because they show the problem that companies did not have a close relationship with their customers, which led to less investment in innovation actions. The scores obtained in cycle 1 demonstrate maturity of firms in relation to the value of innovation in the customer experience dimension, the latter being a better

way to relate with their customers (Chibás et al., 2013). The creation of profiles in social networks was the main action, which began to function as new channels of communication and dissemination. In this sense, the access to an application to generate contact network with customers now represents 10% of billing.

Fashion segment

Figure 3 shows the scores of the fashion segment. It shows that, in general, there was an improvement in the brand's relationship with customers and greater organization of internal and external processes. There was also an improvement in the management of social networks, such as the disclosure of companies through postings and better quality photos. All companies started to offer at least one new facility during cycle 0, resulting in increased customer satisfaction, mainly due to the improvement of the after-sales process through social networks, thus being a way to ensure their loyalty.

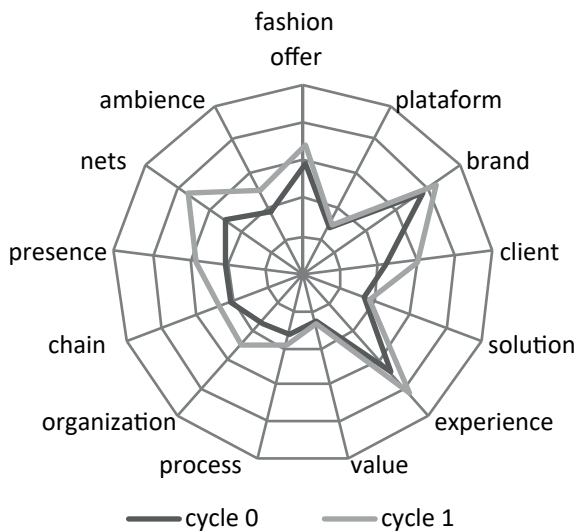


Figure 3. Radar Dimensions of Innovation of companies in the fashion segment of Regional Vale do Rio Doce, MG.
 Source: The author.

It is noteworthy, however, that this action of creating channels for identifying customer needs during cycle 0 was low and considered complex, according to entrepreneurs. This fact suggests that the fashion market in Vale do Rio Doce was not very innovative and had little concern in differentiating itself through innovation. According to Abreu (1996), there is no perception by entrepreneurs that services to identify needs are a great differential of a business. In order to build consumer loyalty, for example, it was possible to create a channel for collecting data from customers and the market and develop after-sales actions, as measures adopted by companies.

In Cycle 1, the dimensions that stood out with higher averages were brand, offer, experience and network (Figure 3). Although the scores show only eventual investments in innovation – and that there is no systematic innovation process when comparing the other dimensions – brand, supply, experience and network are superior. The actions taken were aimed at creating a culture in companies that is customer-oriented, since the focus of business must be on the customer and on real profitability, i.e. the anticipation of their needs (Jesus, 2008).

Mechanical metal segment

Most of the MSEs of the mechanical metal segment has adopted, in cycle 0, the collecting action and has systematized it as routine (Figure 4). It can be observed that the process dimension is one of the ones with the largest growth potential among the evaluated companies of this segment. Although entrepreneurs know the process well and try to pass it on to employees in an informal way, without any document to guide actions, this can lead to several problems, such as loss of efficiency and, consequently, increased costs.

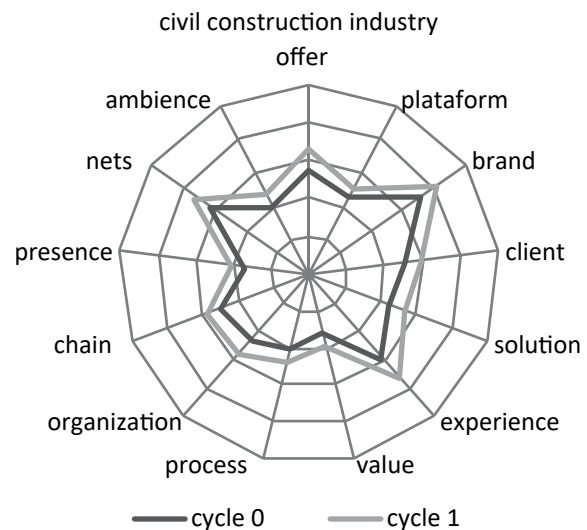


Figure 4. Radar Dimensions of Innovation of companies in the mechanical metal segment of Vale do Rio Doce Regional, MG.
 Source: The author.

These results show that a simple action, implemented in a standardized and systematized way, can bring significant results for companies. Collection roadmaps, for example, have to be developed through partnership between managers and employees involved in the collection process. According to Silva and Dacorso (2014), the adoption of these scripts is a possible solution, since the mapping of processes can lead to a better understanding of the business as a whole. As for the platform, brand, experience and network

dimensions, which obtained an average score of over 3.0, it can be seen that there was evolution in the innovation from the incipient category (Cardoso, 2014).

Automotive segment

For the automotive segment, the average level of innovation was below 3.0, which according to Bachmann and Destefani (2008), is considered low (Figure 5). This means that some companies did not implement the proposed action in the period evaluated. However, regarding only the customer experience and network dimensions, the analyzed companies evolved. This is mainly due to the implementation of the actions proposed by the ALI, according to existing reports of increase in satisfied customers, attraction of new consumers and increase in sales.

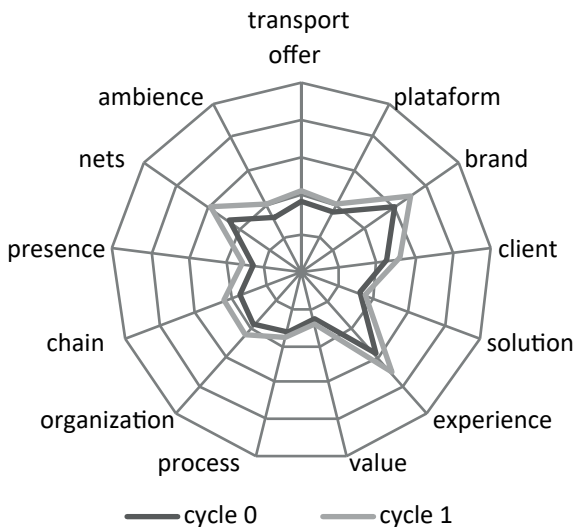


Figure 5. Scores of the dimensions of the Radar of Innovation of companies in the automotive segment of Vale do Rio Doce Regional, MG.
 Source: The author.

It can be noted that the companies analyzed were concerned about how to relate and communicate with their clients, as these two dimensions are closely linked (Chibás et al., 2013). Thus, there was a trend that companies in this sector, although accustomed to having a practical and operational service, would start to use information technology in their favor, because it was perceived the benefits of getting to know their clients better and improving the way they relate to them.

Still for the dimensions client and client experience, the averages in cycle 0 were 2.2 and 2.9, respectively (Figure 5). In cycle 1, the averages of these dimensions jumped to 2.6 and 3.9, moving from a low degree of innovation to the incipient degree. These facts confirm that there was a consis-

tent development, and that the companies have started to value their customers more and have increased their efforts to satisfy them.

Food and beverage segment

According to Figure 6, the MSEs of the food and beverage segment had greater performance in the platform dimension. By innovating in this dimension, we sought to diversify the products used in the same physical structure, thus achieving a greater product mix with relatively low investments in infrastructure. Most companies presented an average of business innovation close to or below score 2. As a consequence, there was a need to execute actions to improve the business to achieve greater results in innovation.

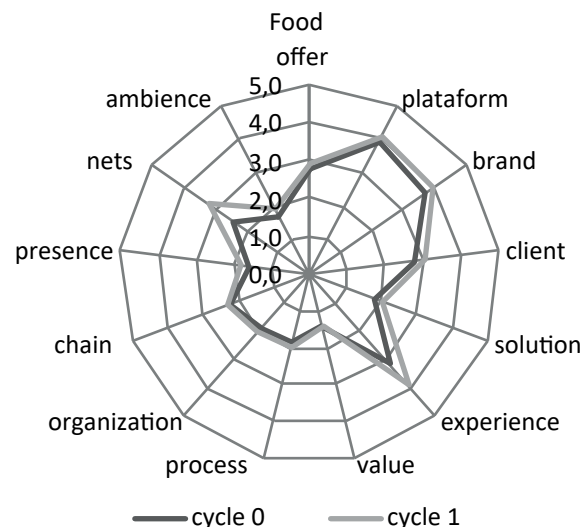


Figure 6. Scores of the dimensions of the Radar of Innovation for companies in the food and beverage segment of Vale do Rio Doce Regional, MG.
 Source: The author.

With the proposal of using social networks in the companies of this sector, a connection and relationship channel was created between the client and the company, that is, the company started to seek and value its clients, interacting and relating with them (Heringer and Dória, 2012).

In cycle 0, the brand dimension presented an average of 3.7, while the average of the client experience dimension was 3.2. Both scores were considered a reflection of a previous implementation of innovation, because in the last three years, for companies in this segment (bars, restaurants, and snack bars), these are dimensions that have been considered priorities in their strategies. This same behavior was also noted in Cycle 1.

Construction and housing segment

According to Figure 7, in cycle 0, the dimension brand presented the highest average in this segment (3.6), while the dimension value obtained the lowest score (1.5). Brand is the dimension most cared for and worked on by entrepreneurs, which can be justified by the operational characteristic of this dimension itself, because, for a company to function, it needs some basic conditions, such as product and customers, in order to have its brand better identified.

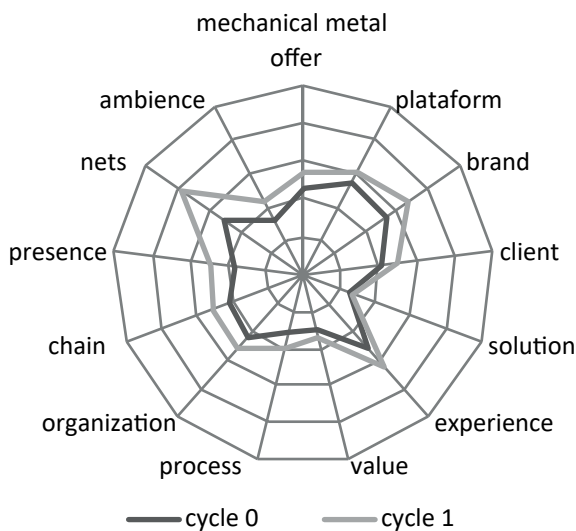


Figure 7. Scores for the dimensions of the Radar of Innovation of companies in the construction and housing segment of Vale do Rio Doce Regional, MG.
 Source: The author himself.

There was little change in the scores from cycle 0 to cycle 1, which reflects the difficulty of working the dimensions in the trade sector of this segment, since it is more common, for example, the implementation of a new business area, taking advantage of the pre-existing structure in this sector (Brito and Andrade, 2016).

In relation to cycle 1, the dimensions that increased the most were customer experience and brand (scores 3.6 and 4.1, respectively), due to the result of actions suggested by agents on how to work the communication channels, with emphasis on social media and website development, and offer facilities and amenities to customers.

The companies monitored by the ALI program were generally successful in relation to the innovation proposed by the agents between cycle 0 and 1. There was an improvement in the degree of innovation in the experience, network and brand dimensions, demonstrating the first impact of the action of the monitoring of the agents and, consequently, the

motivation of the entrepreneurs. The research conducted by the ALI Program during these two cycles generated concrete innovations in a few months, opposing the concept that only innovations considered disruptive are those of the long term (Nunes, 2017). When talking about innovation, it is common to think of something linked to high technology and high investments; however, innovation can be achieved simplified manner and with low investments or even at zero cost.

Most companies did not or hardly ever did post-sales with customers before participating in the ALI Program, and none of them adopted the activity as a standard procedure in cycle 0. According to the testimony of some entrepreneurs, after-sales practice was carried out during informal conversations with customers and their opinions were not recorded.

However, entrepreneurs began to practice this action after they were introduced to its advantages and the correct ways to implement the tool. Santos (2014) states that an after-sales strategy allows generating a close relationship with customers, showing its important for the company, even after having made the purchase. It is precisely at this moment, in the post-sale, that most companies abandon their customers, losing opportunities to establish a strong and lasting relationship with them.

4. CONCLUSION

There was a great effort of the MSEs to implement innovation actions related to the Radar of Innovation dimensions. In the Vale do Rio Doce Regional it was a great challenge to adapt companies with longer acting time to the new habits of consumers, since the innovation proposed was the insertion of companies in social networks. This action requires that many entrepreneurs go through a process of adaptation to these technologies, which requires time and a certain degree of dedication.

It should be noted that the information on which this work was based represents only the evolution of companies from cycle 0 to cycle 1. The companies of the Vale do Rio Doce Regional are still going through the other three cycles of the ALI Program, continuing the actions that allowed them to evolve in the analyzed dimensions, increasing their degree of innovation and aiming for the maximum scores.

The MSEs have proved to be an example of how the economy can extricate itself from the political crisis, because even after facing economic difficulties in the period 2015-2017, they have improved their revenues and profitability and reduced their debts.

REFERENCES

- Abreu, C. B. 1996. Serviço pós-venda: a dimensão esquecida do Marketing. *Revista de Administração de Empresas* 36, 24-31. <https://doi.org/10.1590/S0034-75901996000300004>.
- Bachmann, D.L., Destefani, J.H. 2008. Metodologia para estimar o grau de inovação nas MPE. *Cultura do empreendedorismo e inovação*. Curitiba. <http://www.bachmann.com.br/website/documents/ArtigoGraudelInovacaonasMPE.pdf>
- Brito, H., Andrade, G. 2016. A inovação e o empreendedorismo como diferencial competitivo. Artigo apresentado no Congresso Internacional de Administração: Da crise à oportunidade, Natal, RN.
- Cardoso, F. A. 2014. Radar Zero e Grau de Inovação: Um Panorama Sobre Inovação nas Empresas Participantes do Programa ALI-SEBRAE/RJ. *Cadernos de Inovação em Pequenos Negócios* 2, 55-73. [https://bibliotecas.sebrae.com.br/chronus/ARQUIVOS_CHRONUS/bds/bds.nsf/f636ed9da92fd8bc664e106985af2f74/\\$File/5232.pdf](https://bibliotecas.sebrae.com.br/chronus/ARQUIVOS_CHRONUS/bds/bds.nsf/f636ed9da92fd8bc664e106985af2f74/$File/5232.pdf)
- Chiavenato, I. 2009. *Recursos Humanos: o capital humano das organizações*. Rio de Janeiro: Elsevier.
- Chibás, F.O., Pantaleón, E.M., Rocha, A.T. 2013. Gestão da inovação e da criatividade hoje: apontes e reflexão. *Revista Holo* 3, 15-26. <http://www2.ifrn.edu.br/ojs/index.php/HOLOS/article/viewFile/1082/678>
- Ferreira, R.M.P., Faria, S.D., Fonseca, B.M. 2012. A Geografia dos acidentes na BR-381 entre Belo Horizonte e Governador Valadares: o que pode ser explicado pela morfoestrutura regional? *Geografias Artigos Científicos* 8, 84-97. <https://periodicos.ufmg.br/index.php/geografias/article/view/13331>
- Heringer, B., Dória, M. 2012. A eficácia das redes sociais no marketing de relacionamento no varejo. *Revista de Administração da Fatea* 5, 91-108. <http://unifatea.com.br/seer3/index.php/RAF/article/view/671/728>
- Instituto Brasileiro de Geografia e Estatística – IBGE. 2014. *Produto Interno Bruto dos Municípios – 2014*. <http://cidades.ibge.gov.br/xtras/temas.php?codmun=312770&idtema=162>
- Jesus, G.S.C. 2008. O marketing de relacionamento como ferramenta de diferenciação e fidelização de clientes: o caso da Belíssima. Trabalho de Conclusão de Curso, Universidade Estadual de Santa Cruz, Ilhéus, BA.
- Nunes, A.C.F. 2017. Aula de inovação. *Revista Ensino Superior* 219, pp. 20.
- Organização para Cooperação e Desenvolvimento Econômico - OCDE, Financiadora de Estudos e Projetos – FINEP. 2007. *Manual de Oslo: Diretrizes para a coleta e interpretação de dados sobre inovação*. 3 ed. OECD Publishing.
- Paulla, C.R., Hamza, K.M. 2015. Gestão da qualidade e inovação: evidências para empresas do segmento de alimentação no oeste goiano. *Revista Gestão e Desenvolvimento* 12, 165-178. <https://doi.org/10.25112/rgd.v12i2.332>
- Santos, C. 2014. Pós-venda e CRM: a importância para o cliente como estratégia de diferenciação. *Dissertação de Mestrado*, Universidade Aberta, Lisboa, Portugal.
- Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – SEBRAE. 2015. *Manual do programa ALI*. Brasília: SEBRAE.
- Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – SEBRAE. 2016. *Manual operacional para o orientador do programa ALI*. Brasília: SEBRAE.
- Silva, G., Dacorso, A.L.R. 2014. Riscos e incertezas na decisão de inovar das micro e pequenas empresas. *Revista de Administração Mackenzie* 15, 229-255.
- Simantob, M. 2008. A importância da inovação para a sobrevivência das organizações. *Entrevista*. FNQ em Revista, edição 28. <http://www2.fnq.org.br/informe-se/artigos-e-entrevistas/entrevistas/a-importancia-da-inovacao-para-a-sobrevivencia-das-organizacoes>

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