

IDENTIFICATION OF KNOWLEDGE ENABLERS FOR SURVIVAL AND DEVELOPMENT STRATEGIES: A CASE STUDY AT BRAZILIAN ELECTRICAL SECTOR

IDENTIFICAÇÃO DOS CAPACITADORES DO CONHECIMENTO PARA AS ESTRATÉGIAS DE SOBREVIVÊNCIA E DE DESENVOLVIMENTO: UM ESTUDO DE CASO NO SETOR ELÉTRICO BRASILEIRO.

IDENTIFICACIÓN DE HABILITADORES DE CONOCIMIENTO PARA ESTRATEGIAS DE SUPERVIVENCIA Y DESARROLLO: UN ESTUDIO DE CASO EN EL SECTOR ELÉCTRICO BRASILEÑO.

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Summary

Objective: To identify and analyze knowledge enablers for survival and development strategies used at CEMIG, for its competitiveness. Cemig is a state concessionaire for the Brazilian electricity sector.

Relevance/originality: An important diagnosis was carried out on the use of knowledge in a company in the Brazilian electricity sector, focusing on survival and development strategies for its competitiveness. No similar academic research was identified in the Brazilian electricity sector.

Methodology/approach: a descriptive case study was carried out, with quantitative and qualitative approaches. The collected data were analyzed in the light of the theoretical model of Von Krogh, Ichijo and Nonaka (2001). The unit of analysis was CEMIG and the population consisted of its managers.

Main results: All enablers were identified in the organization. Enablers 2 - "managing the conversations" and 4 - "creating the enabling context" showed important contributions to competitiveness, being considered the strengths. The other capacitors appeared partially, being considered opportunities for improvement. The organization's strategies are focused on both survival and development.

Theoretical/methodological contributions: expansion of the debate on the use of knowledge enablers for survival and development strategies toward competitiveness of companies, enabling new studies in the area.

Social/management contributions: To CEMIG, greater knowledge about its organizational and strategic reality. For the author, clarity about the area of knowledge management and how to use this knowledge as a competitive differentiation in scenarios of survival and development of companies.

Keywords: Knowledge Enablers, Survival and Development Strategies, Competitiveness; Knowledge management; Brazilian electrical sector, CEMIG

Resumo

Objetivo: Identificar e analisar os capacitadores do conhecimento e as estratégias de sobrevivência e avanço utilizadas numa empresa do setor elétrico brasileiro - CEMIG, para a sua competitividade. A Cemig é uma concessionária estatal do setor elétrico brasileiro.

Relevância/originalidade: Foi realizado um diagnóstico importante sobre o uso do conhecimento em empresa do setor elétrico brasileiro com foco nas estratégias de sobrevivência e avanço para sua competitividade. Não foram identificadas pesquisas acadêmicas similares no setor elétrico brasileiro.

Metodologia/abordagem: realizado estudo de caso descritivo, com abordagens quantitativa e qualitativa. Os dados coletados foram analisados à luz do modelo teórico de Von Krogh, Ichijo e Nonaka (2001). A unidade de análise foi a CEMIG e a população foi constituída pelos seus gestores.

Principais resultados: Todos os capacitadores foram identificados na organização. Os capacitadores 2 - "gerenciar as conversas" e 4 - "criar o contexto capacitante" mostraram contribuições importantes para a competitividade, sendo considerados os pontos fortes. Os outros capacitadores apareceram de forma parcial, sendo considerados oportunidades de melhoria. As estratégias da organização estão focadas, tanto com a sobrevivência quanto no avanço.

Contribuições teóricas/metodológicas: ampliação do debate sobre o uso dos Capacitadores do Conhecimento e das Estratégias de Sobrevivência e Avanço para a competitividade das empresas, possibilitando novos estudos na área.

Contribuições sociais/para a gestão: Para a CEMIG, um maior conhecimento acerca de sua realidade organizacional e estratégica. Para o autor, uma clareza sobre a área de gestão do conhecimento e como utilizar este conhecimento como diferenciação competitiva em cenários de sobrevivência e avanço das empresas.

Palavras-chave: Capacitadores do Conhecimento, Estratégias de Sobrevivência e Desenvolvimento, Competitividade; Gestão do Conhecimento; Setor Elétrico Brasileiro, CEMIG

Resumen

Objetivo: Identificar y analizar los facilitadores del conocimiento y las estrategias de supervivencia y superación utilizadas en CEMIG, para su competitividad. Cemig es una concesionaria estatal del sector eléctrico brasileño.

Relevancia/originalidad: Se realizó un importante diagnóstico sobre el uso del conocimiento en una empresa del sector eléctrico brasileño, con foco en estrategias de supervivencia y avance para su competitividad. No se identificaron investigaciones académicas similares en el sector eléctrico brasileño.

Metodología/enfoque: se realizó un estudio de caso descriptivo, con enfoques cuantitativos y cualitativos. Los datos recopilados se analizaron a la luz del modelo teórico de Von Krogh, Ichijo y Nonaka (2001). La unidad de análisis fue CEMIG y la población estuvo conformada por sus directivos.

Resultados principales: Se identificaron todos los habilitadores en la organización. Los habilitadores 2 - "gestionar las conversaciones" y 4 - "crear el contexto propicio" mostraron importantes contribuciones a la competitividad, siendo considerados las fortalezas. Los demás condensadores aparecieron parcialmente, considerándose oportunidades de mejora. Las estrategias de la organización se centran tanto en la supervivencia como en el avance.

Aportes teóricos/metodológicos: ampliación del debate sobre el uso de Habilitadores del Conocimiento y Estrategias de Supervivencia y Avance para la competitividad de las empresas, posibilitando nuevos estudios en el área.

Aportes sociales/de gestión: Para CEMIG, mayor conocimiento sobre su realidad organizacional y estratégica. Para el autor, claridad sobre el área de gestión del conocimiento y cómo utilizar este conocimiento como diferenciación competitiva en escenarios de supervivencia y avance de las empresas.

Palabras clave: Habilitadores de Conocimiento, Estrategias de Supervivencia y Desarrollo, Competitividad; Gestión del Conocimiento, Sector Eléctrico Brasileño, CEMIG

1. INTRODUCTION

The purpose of this article is to analyze the importance of using knowledge as a competitive advantage in organizations, as well as the need for its management. To put this management into practice is not an easy task, since knowledge is difficult to measure.

There are, in the literature, several concepts of knowledge management (KM). For Davenport & Prusak (2003), KM is a set of processes that govern the creation, dissemination and use of knowledge to fully achieve the objectives of an organization.

In the view of Von Krogh, Nonaka and Ichijo (2001), KM begins to stand out, from the 1990s onwards, as a methodology capable of guiding the course of post-industrial society. This perspective is based on the premise of generating competitive advantage from the perspective of knowledge and construction of a fruitful environment for continuous learning, both by high-level managers and by workers in general.

Knowledge management in Brazil has also become more present since the 2000s. Currently, several researchers are dedicated to the subject, such as Terra (2000); Vasconcelos (2000); Gonçalves (2010); Alvarenga Neto *et al* (2013); Carvalho Jr. (2013); Silva *et al* (2016); Gomes (2014); Braga (2014); Pereira *et al* (2015); Pereira *et al* (2017), Oliveira and Bolsoni (2019), Corrêa *et al.* (2019), Silva Junior *et al* (2021).

Von Krogh, Ichijo and Nonaka (2001), for example, state that managers should promote the creation of knowledge, instead of controlling it, which was called Knowledge Training, based on the five knowledge enablers, and that are: instilling knowledge vision, managing conversations, mobilizing knowledge activists, creating the right context, and globalizing local knowledge.

The authors emphasize that one of the biggest challenges for organizations is to put knowledge management into practice as a methodology for operational efficiency. Von Krogh *et al.* (2001) consider that, for knowledge to be used as a competitive advantage, the creation of knowledge must be inserted in the organization's survival and development strategy. Strategies, according to these authors, are essential and complementary to organizations, with survival strategies operating in the exploration of knowledge to maintain their current level of success and performance, and development strategies acting to improve performance for the future, and are aimed at for the profitability of the organization in the present and in the short

term, and its objective is to guarantee mastery over the current business scenario. The strategy, whether for survival or development, must be based on training for knowledge and not just on achieving managerial goals.

The institution evaluated in the research that gave rise to this article was CEMIG – Energy Company of the State of Minas Gerais, a company in the Brazilian electricity sector, created in 1952, with the objective of analyzing the energy conditions of the State and executing a development project as well as the implementation of an industrial park in Minas Gerais. CEMIG is made up of a *holding* company, and is one of the most solid and important groups in the electric energy sector in Brazil. It is a publicly traded company controlled by the Government of the State of Minas Gerais. It has more than 198,000 shareholders in 44 countries. Its shares are traded on the São Paulo, New York and Madrid Stock Exchanges. Today, the Company is a reference in the global economy, recognized for its sustainable performance. For 20 consecutive years, it has been part of the *Dow Jones Sustainability World Index (DJSI World)*.

Although CEMIG is considered a model company and is attentive to the market where it operates, no studies were found in the literature addressing the relationship between competitiveness, knowledge enablers and survival and development strategies that had been carried out in an electric power concessionaire in Brazil.

The main objective of the research was to identify and analyze the enablers of knowledge and the survival and development strategies used at CEMIG, aiming at its competitiveness. The collected data were analyzed in the light of the theoretical model of Von Krogh, Ichijo and Nonaka (2001).

This article consists of 5 items, starting with this introduction (item 1) which defines its objectives, followed by the theoretical framework (item 2) which presents the main concepts and models on the subject. Then, comes the methodology used in the research (item 3) and the presentation and analysis of results (item 4). Finally, the conclusions and final considerations are presented (item 5).

2 THEORETICAL FRAMEWORK

From the 1990s onwards, Knowledge Management began to stand out as a methodology capable of guiding the paths of the post-industrial information and knowledge society. This new vision is based on the premise of generating competitive advantage from the perspective of knowledge and building a fertile environment for continuous learning by high-level managers and workers in general. The objective is to enable the recognition of the value of knowledge in an attempt to make it a competitive differential (Nonaka and Takeuchi, 1997).

2.1 The Organizational Knowledge

From the 1980s onwards, it can be observed that knowledge starts to play a key role in society, deeply marking the economy when compared to the Industrial Age. As Drucker (1993) states, knowledge ceases to be “a” resource, and becomes “the” only significant resource. The milestone of the knowledge society is the transition from physical and financial capital of industrial society to human and intellectual capital. The author also adds that the industrial society developed focused on the production of material goods and mass production. But from the advancement of technology, its efforts were directed towards the computerization of society in order to disseminate information and generate knowledge.

It was in this context that the authors Nonaka and Takeuchi (1997) and Davenport and Prusak (2003) highlighted the creation of new knowledge by the company, through the conversion of tacit knowledge (based on personal experiences, know-how and motivations) to explicit knowledge (coded in manuals and procedures), which can be reused by the organization in a strategic way.

However, these same authors, including Von Krogh *et al.* (2001), also discuss the complexity of an organization in effective knowledge management. Thus, the creation of knowledge and its management constitute a dynamic process that depends on a change in the general position of the members of the organization. The aim is to provide an adequate context that facilitates the processing of organizational knowledge.

Therefore, organizational knowledge management is, in fact, about managing the context and conditions in which knowledge can be created, shared and made available for use in order to achieve organizational goals (Choo & Alvarenga Neto, 2010).

2.2 Knowledge Management and Competitiveness

According to the authors Nonaka and Takeuchi (1997), a new understanding about organizational knowledge and knowledge management was formed, which claims that knowledge creation is a strategic task of organizations and is considered the only one capable of fostering a process of continuous innovation that guarantees their sustained competitiveness. Such a view, elaborated through the observation of several Japanese organizations, is in opposition to the western view, which saw organizations only as machines to process knowledge.

It is possible to observe that the focus on the creation of knowledge and its management drastically reduced the life cycle of the products, and this is due to the increasing investment in research and development. Nowadays, companies that maintain an effective knowledge management tend to become leaders in their markets and to have an involvement with the external market (Terra, 2005). Technological evolution and competition have made time and knowledge an important competitive advantage for organizations.

The authors emphasize that the differentiating factor of these organizations is their ability to create new knowledge from an environment that is favorable to the externalization of tacit knowledge, its combination with explicit knowledge, through the conversion process and, finally, its dissemination by the group and incorporation into new products, processes and systems. Then, the spiral of knowledge and the ways of converting knowledge appear. This process enables the externalization of knowledge, which generates the internalization and passage of tacit knowledge into explicit knowledge, and from explicit knowledge into tacit knowledge.

It is possible to conclude that Knowledge Management is constituted by the combination of technological, structural, human, cultural and behavioral aspects. It is an approach through which organizations that value knowledge can evolve. This constitutes a change in the management paradigm and not just in tools, and which places continuous learning as a strategy capable of generating competitiveness and, at the same time, demands a deepening of the meaning of learning in the work environment.

2.3 Von Krogh, Ichijo and Nonaka's model

Von Krogh *et al.* (2001) affirm that the creation of the enabling context is “a fundamental condition for the process to happen and knowledge to be generated” (2001, p. 16). Companies should, instead of just trying to manage knowledge, focus on training for knowledge, which implies organizational activities that may have a positive impact on knowledge creation. These authors consider that, for knowledge to be used as a competitive advantage in organizations, the creation of knowledge must be part of its strategy. Survival and development strategies are defined.

Survival strategies ensure the company's profitability in the present, and their objective is to ensure dominance over the current business scenario. The authors emphasize strengths and weaknesses in the company's knowledge. Its purpose is to take advantage of existing business opportunities and neutralize threats (such as the entry of a new competitor in the market), ensuring mastery over the company's current business environment.

Development strategies build the company's profitability into the future. They reinforce strengths while trying to eliminate weaknesses from the company's future knowledge base. Its purpose is to take advantage of future business opportunities and neutralize the effects of threats. These strategies are typical of emerging sectors.

In general, the careful balance between development and survival strategies allows the company to prepare for unexpected changes in the market such as the disappearance of sectoral boundaries, rapid devaluation of current knowledge and skills, and the obsolescence of existing products and services.

Strategies, whether for survival or development, must be based on enabling knowledge, in other words, on developing an enabling context. In knowledge management, the need to maintain a sustainable competitive advantage is crucial and, therefore, the authors suggest five knowledge enablers, which are:

- Enabler 1 - Instil knowledge vision: responsible for stimulating the formation of micro-communities, leveling knowledge and contributing to the creation of concepts, in addition to releasing tacit knowledge, which can drive innovation and generate the appropriate knowledge vision .

- Enabler 2 - Manage conversations: Promotes creativity in the organization through conversations and encouraging everyone's participation. From the exchange of ideas and opinions, conversations provide the main pillar of knowledge creation, which is tacit sharing within micro-communities.
- Enabler 3 - Mobilizing knowledge activists: aims to train and create the presence of knowledge catalysts, which form micro-communities of knowledge and facilitate the path for the creation and justification of concepts, as well as for the development of prototypes.
- Enabler 4 - Create the right context: seeks to structure the organization so that the creation of knowledge in its environment is more effective and efficient, overcoming all personal and organizational barriers that may exist. The enabling context is the factor that stimulates the creation of knowledge. Some organizations face a set of barriers and are not always able to create an enabling context.
- Enabler 5 - Globalizing local knowledge: provides the dissemination of local knowledge throughout the organization, providing the leveling of knowledge. The process of globalization of local knowledge will ensure that the right knowledge becomes accessible to the right people or groups in a large company, and that the original knowledge is recreated in another form, providing another round of innovations.

The next item will present the methodology used for the development of the research.

3 METHODOLOGY

According to Vergara (2005), and based on the theories presented, this research is classified in terms of purposes as descriptive, and it seeks to expose characteristics of a given population or a given phenomenon. Regarding the means, it is a case study involving quantitative and qualitative research. Yin (2001) defines case study as an empirical process that investigates a contemporary phenomenon in its real-life context, especially when the boundaries between phenomenon and context are not clearly defined. The use of the quantitative and qualitative approach became viable considering the assumption that the two approaches are complementary, according to Collis and Hussey (2005).

The unit of analysis is CEMIG, Energy Company of Minas Gerais. The studied population consisted of their managers and superintendents. The total number of employees that make up

the population is 145 individuals, of which 27 are superintendents, considered senior management, and 118 managers, considered middle leadership, distributed among the company's Boards and Regional Offices. Considering the fact that some managers and superintendents were unable to respond to the survey, the sample consisted of 76 individuals, that is, 52.4% of the population.

Regarding the data collection instrument for the quantitative analysis, it was adapted from Silva *et al* (2016) and based on the theoretical model by Von Krogh *et al* (2001), using the Likert measurement scale, with 33 statements. Respondents specified their level of agreement or disagreement with the aim of encompassing the five constructs, that is, the Knowledge Enablers, and the two strategic dimensions, survival and development, which it was intended to examine.

The degree of agreement was: 1 = totally disagree, 2 = partially disagree, 3 = neither agree nor disagree, 4 = partially agree and 5 = totally agree. It was assumed that means below 3 indicate a degree of non-agreement.

A qualitative research was also carried out, using a questionnaire with seven open questions applied to a top leadership employee, responsible for engineering and asset management in the energy distribution area, one of the most strategic areas of the organization. This stage of the research sought to verify, in the perception of the organization's top management, how knowledge enablers and the strategic references mapped at CEMIG contribute to its competitiveness.

Quantitative data in the survey were processed using Microsoft FORMS and EXCEL 2013 softwares.

4 RESULTS ANALYSIS

4.1 Characterization of Survey Respondents

With the objective of outlining the profile of the respondents, the main characteristics identified from the final sample of 76 respondents, that is, 52.4% of the population, are presented below. Considering the distribution variable by position of leadership in the organization, 83% of them act as Managers and 17% as Superintendents. The result indicates,

in proportional values, a similar participation between the two positions, with 48.1% of Superintendents and 53.4% of Managers responding to the survey.

It can be seen that, considering the background of respondents, the vast majority of Leaders are Engineers, comprising 76.3% of respondents. Next, we have the participation of Administrators and Economists, making up, each group, 7.9% of participation in the analyzed sample. It is also possible to note that administrators, even though they are the third largest category among respondents, are not those of any member of senior leadership, that is, the position of superintendent. Analyzing the respondents' education level, it was revealed that most of them, 46 professionals (60.5%), completed Specialization/MBA courses, followed by 25 professionals (32.9%) who had already obtained a Master's degree, and 2 (2,6%) who are currently enrolled in a Master's program. Among the responding Leaders, there is one with a completed Doctorate and one in progress. It was possible to observe that the respondents have continued their studies, which is very desirable in the body of leaders of the organization. The company has an incentive program, established in a work procedure instruction, which establishes criteria for the participation of employees occupying positions, not only of leadership, but also of its University Plan, in postgraduate courses with co-payment of costs.

With regard to the age of the respondents, the results reveal a maturity in the body of leaders responding to the survey. The age group ranging from 40 to 49 years old comprises 49% of the respondents, followed by the age group from 50 to 59 years old, which presented a result of 36%. With respect to the time in the company of the respondents, 38% of them have been in the organization for more than 30 years, followed by the range that comprises the time from 10 to 20 years, also showing an organizational maturity to act in the position in which they occupy.

4.2 Knowledge Enablers at CEMIG

The averages of the standardized results for the knowledge enablers present at CEMIG are presented in Table 1. It was possible to observe that the questions used to identify the presence of the knowledge enablers according to the degree of agreement with respect to the statements, are with a average between 3.1 and 4.4. The average standard deviation presented among the enablers was equivalent to 0.3, indicating homogeneity in the responses. Another point to be observed is the low Amplitude presented among all the general results that make up the

identification of Knowledge Enablers, equivalent to 1.3, evidencing a low variability of the sample data.

Table 1
Descriptive Statistics of Knowledge Enablers

GENERAL IDENTIFICATION OF ENABLERS		AVERAGE	STANDARD DEVIATION	RANGE
		4.0	0.3	1.3
ENABLER 1 - Instill the Vision of Knowledge		3.9	0.5	1.3
1	I am always encouraged to share my knowledge with other CEMIG members.	4.3	0.9	----
2	At CEMIG, I am involved in discussions on topics that go beyond the scope of my role.	4.0	1.1	----
3	My leadership generally communicates positive ideas and values that encourage me to feel good about my role.	4.3	0.9	----
4	CEMIG seeks to show me how to have a vision of how to move from the present to the future.	3.8	1.0	----
5	CEMIG provides resources for creating communities of specialists who wish to share their knowledge.	3.1	1.2	----
ENABLER 2 - Manager Conversation		4.1	0.1	0.2
6	I feel free to express my ideas, opinions and beliefs with people from CEMIG.	4.2	0.9	----
7	My leadership encourages discussions that are based on current data, with the aim of solving problems effectively.	4.3	1.0	----
8	I usually participate in discussions on subjects such as innovations, processes, services and technology and I can express my opinion.	4.0	1.1	----
9	I take part in discussions of issues that turn into new concepts understandable to all members who were involved in the conversation.	4,1	0,8	----
ENABLER 3 - Mobilize Knowledge Activists		3.8	0.2	0.6
10	The conversations I participate in at CEMIG inspire me to broaden concepts and formulate new ideas.	4.3	1.0	----
11	I realize that CEMIG encourages people to develop	3.7	1.1	----

	concepts and creations, as well as new creations.			
12	CEMIG prepares its employees to carry out new tasks that require their knowledge.	3.7	1.0	----
13	I can see actions that stimulate the creation of knowledge at CEMIG.	3.7	0.9	----
ENABLER 4 - CREATE PROPER CONTEXT		4.0	0.3	0.7
14	I can use virtual spaces to develop knowledge creation at CEMIG.	3.6	1.0	----
15	I can expand and also share, without restriction, all the knowledge I have about CEMIG.	3.7	1.2	----
16	My leadership allows me a degree of autonomy that encourages me to be creative.	4.4	0.9	----
17	I feel I am in a supportive environment to share my knowledge.	4.3	0.8	----
ENABLER 5 - Globalize Local Knowledge		3.9	0.3	0.7
18	I can perceive local knowledge from other sectors disseminated in the sector where I work.	3.8	0.9	----
19	I take part in training courses at CEMIG that are created by UniverCEMIG.	4.2	1.1	----
20	My leadership allows me to expose my knowledge to other areas of CEMIG.	4.2	0.9	----
21	I visit other CEMIG units in order to acquire and receive new knowledge.	3.5	1.2	----

Source: Research data - (MG, March/2021)

When considering the average of all questions to identify each enabler, the one with the greatest propensity to agree is Enabler 2 - Managing Conversations with an average result of 4.1, being a strong point for the organization. With the lowest index on average, with a result of 3.8, Enabler 3 - Mobilizing Knowledge Activists was closer to the result "neither agree nor disagree".

Considering the first Enabler for knowledge 1 – Instilling the Vision of Knowledge, object of questions 1 to 5, it can be said that it is used at CEMIG, since, of the five questions, three

have very high percentages in agreement, one of them presents a reasonable agreement and only one of them with a percentage of agreement lower than the percentage of disagreement. Even being used, there are points of attention and opportunities for improvement regarding the vision of the future and the communities of specialists. It is important to remember that the sharing of knowledge, through the communication of ideas by the leaders, is what makes the other employees of the organization feel instigated to create knowledge.

When evaluating the answers obtained for questions 6 to 9 about Enabler 2 - Manage conversations, it can be seen that it is fully used at CEMIG. This is evidenced in the research result, where this Enabler presents the best result among all. Three of the four questions had excellent results and only one had a reasonably concordant result. It is the strength of the organization. The enabler's first question reinforces that CEMIG has an environment that favors the expression of ideas for its leadership. Von Krogh *et al.* (2001) consider this enabler to be the main one, since it exerts a strong influence on the five stages of knowledge creation, as it is linked to the application of people's knowledge through their relationships.

Considering the results of the third one, Enabler 3, for knowledge – Mobilizing Knowledge Activists, it can be said that it is used at CEMIG, as a positive result was obtained for agreement in all questions 10 to 13. But at the same time, this Enabler obtained high rates of 'neither agree nor disagree' in three of its questions, which draws the attention of the surveyed public. This behavior indicates that respondents tend not to confirm the presence of the enabler, but they also do not disagree with its existence. This shows that the organizational environment inspires people to formulate new ideas, but for some reason this inspiration is not encouraged to be developed. For this reason, this enabler is identified as an opportunity for growth for the organization. Mobilizing Knowledge Activists brings benefits to CEMIG's leadership and, consequently, to the entire organization, as it provides for the development of new knowledge.

It is possible to state, based on the answers to all the questions that evaluate Enabler 4 – Creating the Appropriate Context, being them 14 to 17, that this context exists at CEMIG, because of the four questions, two have very high percentages in agreement and two of them show reasonable agreement. It is also possible to show, on the part of the leadership, that there is an environment conducive to interaction between them. It is enough to know if this knowledge can be disseminated throughout the organization.

In a general assessment of Enabler 5 - Globalizing Local Knowledge, in relation to questions 18 to 21 used, it is possible to state that this context exists at CEMIG, since of the four questions, two have very high percentages of agreement, one presents reasonable agreement and a low concordance. As the survey was applied only to leadership, and as CEMIG is territorially and culturally broad, globalization is necessary and, therefore, reveals itself as a challenge.

4.3 Survival and development strategies

The averages of the standardized results, for the survival and development strategies, are shown in Table 2.

In this Table, it is observed that the questions used to identify the presence of survival and development strategies according to the degree of agreement for the statements, have an average between 2.6 and 4.1. The average standard deviation presented between survival and development strategies was equivalent to 0.5, indicating homogeneity in the responses.

Table 2
Descriptive Statistics of Strategies

GENERAL IDENTIFICATION OF SURVIVAL AND DEVELOPMENT STRATEGIES		AVERAGE	STANDARD DEVIATION	RANGE
		3.5	0.5	1.4
SURVIVAL STRATEGY		3.2	0.6	1.4
22	The company exhibits good market positioning compared to competitors..	4.0	0.9	----
23	The performance of my leadership focuses only on immediate needs, focusing its activities on specific issues of the present.	2.6	1.3	----
24	I usually notice that CEMIG seeks to make it difficult for new competitors to enter the market, using its knowledge and experience as a tool capable of meeting its needs.	2.7	1.2	----
25	CEMIG knows its current sources of competitive advantage and how to improve them in order to sustain this competitive advantage over time.	3.7	1.0	----

26	CEMIG retains the value and uniqueness of the company's knowledge and, at the same time, defends it against attempts at imitation or substitution by competitors.	3.0	1.0	----
STRATEGY FOR ADVANCE		3.7	0.2	0.6
27	The performance of my leadership aims at long-term actions.	4.1	1.0	----
28	Aiming to obtain improvements in its business, CEMIG seeks to reinforce its strengths and reduce its weaknesses in relation to its organizational knowledge.	3.8	0.9	----
29	I notice that CEMIG has development processes for new businesses and services.	3.6	1.1	----
30	In general, CEMIG exhibits differentiated characteristics of experiences acquired in current businesses for the creation of future businesses.	3.9	0.9	----
31	I can see that CEMIG has formed strategic alliances with research and technology institutions.	3.6	1.0	----
32	I can see that CEMIG has actions to reduce the impacts generated by threats of continuous changes in the positioning of the product-market in the competitive environment in which it finds itself.	3.4	1.0	----
33	CEMIG aims to dominate the environment of the future by seeking ways to influence the evolution of its sector in order to increase its future negotiating power over suppliers and potential customers.	3.5	0.9	----

Source: Research data - (MG, March/2021)

Based on the results with a low level of agreement, in a general analysis, in most of the questions presented in questions 22 to 26, it is considered that at CEMIG, survival strategies are not widespread. There is a strong perception on the part of respondents that CEMIG has a good market position, perhaps due to the monopolistic nature of its business. For Von Krogh *et al.* (2001), this good market positioning, added to the performance of leadership focused on immediate needs and the use of current knowledge to prevent the entry of new competitors,

generate strength for the company to obtain a better use of the opportunities that arise due to the level of success and performance, allowing the company to reinforce its strengths and develop its weaknesses, in order to meet its present needs.

The performance of leadership, however, is not focused on immediate needs, but on the medium and long term. Still, as already mentioned, the organization does not have direct competitors, which is why the results regarding the use of current knowledge to prevent the entry of new competitors were low. This result is a crucial point for improvement, because, as explained by Von Krogh *et al.* (2001), the objective of the survival strategy for organizations is to ensure dominance over the current business scenario, mainly assuming a good market position in comparison with competitors.

When evaluating, in general, the answers obtained through questions 27 to 33 about the strategies for development, it can be said that CEMIG, in the perception of its leadership, shows its concern in developing these strategies. All seven questions used showed favorable results for agreement, some in higher percentages, and the others with great balance for agreement in the analysis by position. This result emphasizes that advancing the organization's business is a leadership concern. It is important to remember that Von Krogh *et al.* (2001) affirm that the organization's strategy must recognize that knowledge is indeed important, no less than quantifiable factors, and that using it means guaranteeing the organization's development.

To complement the analysis, Figure 1 presents an overview of questions 1 to 33, considering the order of greatest agreement to that of greatest disagreement, in which it is possible to point out some highlights, such as:

- The strongest points in the organization are in the organizational environment, propitious and with autonomy among the leaders for the creation of knowledge.
- The points that deserve special attention due to impartiality, those with a 'neither agree nor disagree' answer, concern competition, substitute services or products, and the evolution of its sector of activity.
- The points for improvement are related to the leadership's short-term action, with more immediate actions, regarding the issue of competition again, and the non-identification/use of specialist communities to share knowledge.

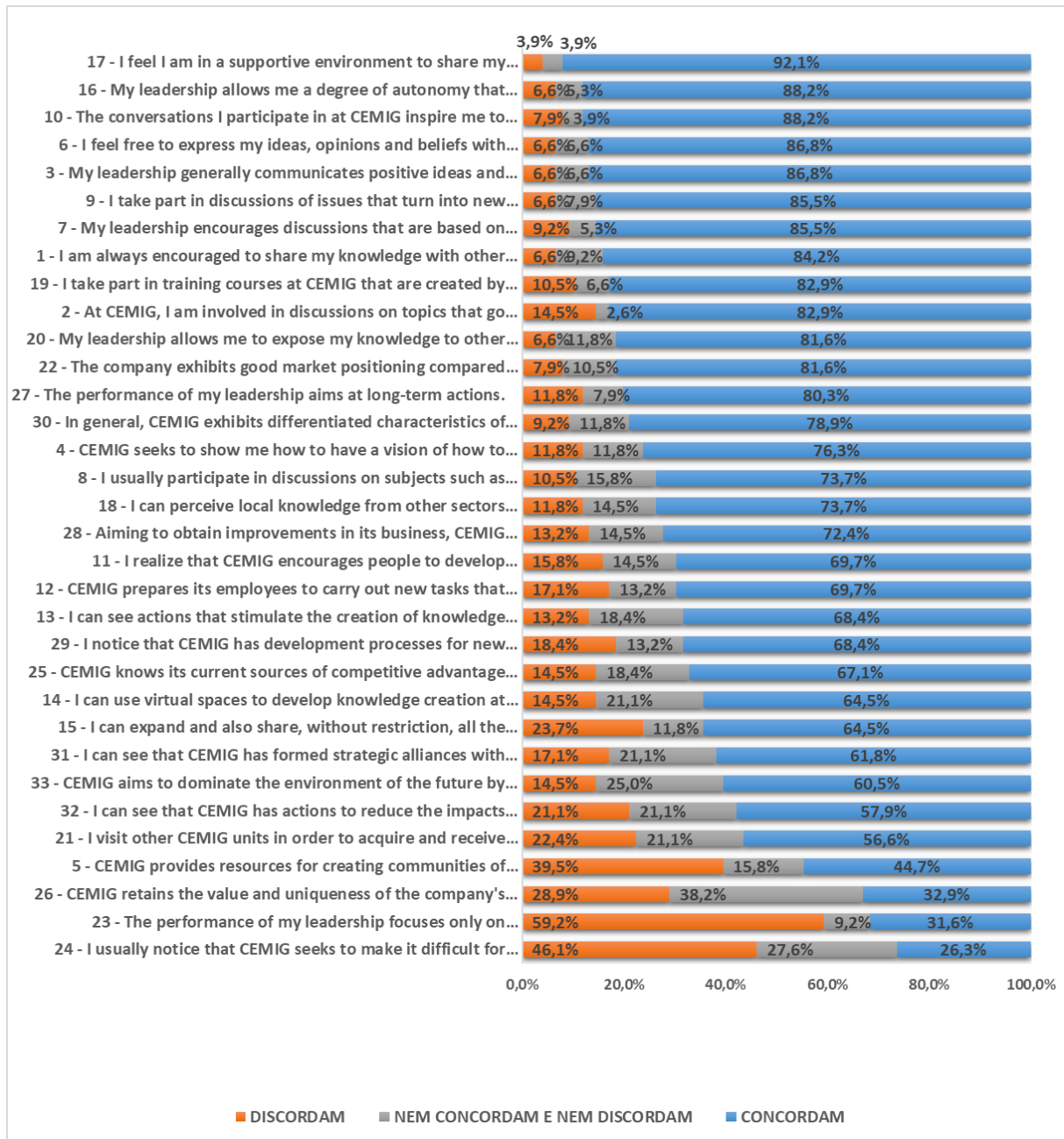


Figure 1 - Overview of questions 1 to 33

Source: Research data - (MG, March/2021)

4.4 Knowledge enablers and Competitiveness: discussion of results

With the aim of relating the Knowledge Enablers identified in the organization to its competitiveness, the last stage of data collection was carried out, in which a questionnaire was

applied to one of CEMIG's superintendents. This questionnaire focused on quantitative research and aimed to assess the contribution of knowledge enablers to competitiveness.

It was reported to the manager that, considering the results of the quantitative survey, respondents in general tended not to confirm, but also not to disagree that CEMIG creates a favorable environment for the exchange of experiences, encouraging the creation of knowledge. He was asked how CEMIG needs to encourage this knowledge creation and whether it is possible to perceive that this is fundamental for the organization's competitiveness. The favorable responses are in line with Davenport and Prusak (2003) who claim that the valuation of human resources by companies, with regard to nurturing the organization through their knowledge, results in the retention of talents that bring with them their tacit knowledge and generate new possibilities for the organization, which is a source of competitive advantage.

Additionally, it was also contextualized to the manager that, considering the general analysis carried out, the Managers proved to be more aware of the importance of knowledge than the Superintendents. Therefore, he was asked what can be done to “instill the vision of knowledge” in a balanced way for all CEMIG's senior and middle management and what and how CEMIG could “instill the vision of knowledge” for its entire workforce. Bench markings were obtained as a response. In the view of Bogetoft (2011), relative performance evaluations or benchmarking, consist of the systematic comparison of the performance of a firm with that of others. Benchmarking can be used in different situations, such as, for example, to carry out intra-organizational comparisons, when a headquarters wants to promote cost efficiency in its different subunits.

When considering that innovation is a factor that guarantees competitiveness, and that CEMIG showed average results in the quantitative research that indicate that it needs to innovate more in processes and services, questions were asked about innovation and competitiveness. Based on the answers, as stated by Von Krogh *et al.* (2001), the creation of exclusive knowledge, available for activities that create value or promote the best use of knowledge are fundamental for the organization's competitiveness. Choo (2003) emphasizes this understanding, pointing out that the construction of knowledge results in new knowledge, which leads to innovations, new products and new organizational capabilities.

The manager was contextualized that the question “*My leadership gives me a degree of autonomy that encourages me to be creative*” had the highest percentage of agreement among all the questions surveyed and, therefore, the manager was asked what factor would have contributed to CEMIG obtaining this result. Considering the response obtained, it is possible to identify that CEMIG is a company that seeks innovation, but is limited to investments in this area due to the failure to take advantage of past efforts. And, due to a new scenario that the organization is inserted, it needs to reorganize itself, and then continue to invest in innovation. According to what was reported by the manager regarding the identification of a point of attention in this reduction in investments in innovation, it is in line with the thinking of Alvarenga Neto (2008, p.25), who emphasizes “that investment in continuous education and training is an indispensable condition for the economy of the Knowledge Age, and that the human mind has become a direct force of production.”

The manager was shown that, among the results, CEMIG presented an opportunity for the use of virtual spaces in order to provide learning and knowledge formation. And also how this could be improved and contribute to CEMIG's competitiveness. The answer given by the superintendent reinforces the need to improve the use of virtual spaces in the sharing of knowledge evidenced in the quantitative research. According to Silva *et al* (2016), through enablers, “which provide the appropriate context and globalize local knowledge”, it is possible to identify elements that can be explored to favor the dissemination of knowledge in organizations.

Finally, as an example, a question was formulated to mention some actions developed by CEMIG with a view to guaranteeing its survival and development in the competitive energy market. In recent years the organization has undergone many changes in the way of conducting its management. The focus on results and efficiency was incorporated in order to break the paradigm of an inefficient state-owned company. An unprecedented renewal of assets was initiated with a view to returning the remuneration of the energy tariff, in line with the regulatory model.

As stated by Von Krogh *et al* (2001), in their central business strategy, organizations need to create knowledge and use it effectively, obtaining competitive advantage as an effect. Therefore, it is identified at CEMIG that knowledge enablers feed the presence of survival and

development strategies, and that these can directly contribute to its competitiveness. This analysis was carried out, even considering that survival strategies are not widespread in the organization. This is one of the areas for improvement identified in the survey.

The results presented for enablers 1 – instilling knowledge vision and 2 – managing conversations, demonstrate that CEMIG has generally good results. Even though enabler 1 presented a slightly lower result, tending towards impartiality, if added together, these results favor an increase in its competitiveness. This happens due to the presence of some factors such as: the communication of ideas and values that favor a positive feeling in relation to the position and the stimulus for a vision of the future. The presence of the factors mentioned by the company can lead to the development of unexpected knowledge between sectors. One detail that draws attention is that the company has to encourage managers to share their knowledge even more.

It was identified, in the quantitative research, that enabler 3 – mobilizing knowledge activists, respondents tend to “neither agree nor disagree”. However, it was possible to observe that, within the company, the conversations experienced inspire the expansion of concepts and stimulate the formulation of new ideas among the people involved. This agreement strengthens enabler 3 in the organization.

The presence of enabler 4 – creating the right context, strongly indicates that the company provides an environment for knowledge creation, especially among its leaders, who have a high degree of autonomy to be creative. But, as a point of contradiction, the survey results showed that, in a global assessment, CEMIG's leadership does not have much autonomy to share any and all types of knowledge without restriction. But the fact is that leadership feels it has a supportive environment to share its knowledge. In the qualitative research, the superintendent also highlighted this result, commenting on “CEMIG's DNA” always being one of innovation and, therefore, leadership autonomy. This identified contradiction represents an opportunity for reflection and discussion.

When used in the organization, the evolution of knowledge can make it difficult for new competitors to enter the market, proving to be a survival strategy. In this research, it was not possible to state that the use of CEMIG's knowledge aimed at its continuous improvement makes it difficult for new competitors to enter. Once more, this result can be explained due to

its monopolistic nature of not having substitute products or services for its business in the short term. In a general analysis, the presence of enabler 4 at CEMIG indicates the existence of several competitive differentials. It is possible to identify that these differentials meet the survival and development strategies, contributing to the company being differentiated in its sector and strengthening its market position.

Among the results of the evaluation of enabler 5 – globalizing local knowledge, it was possible to identify that, in general, leaders perceive local knowledge from other bodies disseminated in their workplace. Furthermore, the application of training by the corporate university, UniverCEMIG, was identified, but to a lesser extent for superintendents. This factor is due to the fact that the Corporate University is little used for top leadership positions. There is the dissemination of knowledge among the bodies, but a visit to other units is a widespread practice in a balanced way in the organization by leadership. As pointed out by Von Krogh *et al.* (2001), the contribution of the development of knowledge diffusion is the breaking of physical, cultural, organizational and managerial barriers that can compromise the effectiveness of knowledge transfer. Therefore, each time knowledge becomes accessible to people and groups in a company, it can provide rounds of innovations. Therefore, there is a need to go deeper into the subject regarding the dissemination of knowledge to all levels of CEMIG.

5 CONCLUSIONS / FINAL CONSIDERATIONS

The main stage of this research developed here, which corresponds to the general objective of this work, had the purpose of identifying knowledge enablers and analyzing their contributions to both survival and development strategies seeking the company's competitiveness. Through the analysis carried out, several contributions to CEMIG were identified.

Considering the enablers 1 – instilling a knowledge vision and 2 – managing conversations with the company, both presented good results, favoring the increase of its competitiveness. A point of attention identified is that the company has to encourage managers to share their knowledge even more.

Analyzing the contributions of enabler 3 – mobilizing knowledge activists, it was possible to notice that there is a tendency not to confirm its presence in the organization, but the

respondents also do not disagree with its existence. This indeed shows that the organizational environment inspires people to formulate new ideas, but for some reason this inspiration is not stimulated to be developed. However, the high level of agreement for question 10 – “The conversations in which I participate at CEMIG inspire me to expand concepts and formulate new ideas”, made it possible to perceive that, within the company, the conversations that took place there inspire the expansion of concepts and stimulate the formulation of new ideas among the people involved.

Considering enabler 4 – creating the right context, the result obtained strongly signals that the company provides an environment for knowledge creation, especially among its leaders, who have a high degree of autonomy to be creative. Nonetheless, a point of contradiction emerged, that is, the results of the survey showed that, in a global assessment, CEMIG's leadership does not have much autonomy to share any and all knowledge without restriction. This fact is explained by the existence of strategic knowledge to be protected and which is only shared by a small group of professionals. When evaluating enabler 5 – globalize local knowledge, we were able to observe that leaders perceive local knowledge from other bodies disseminated in their work environment. The identification of actions to share knowledge globally provides the diffusion of local knowledge, generating a leveling of it throughout the organization.

It was also possible to identify that the dissemination of knowledge, the leveling of knowledge and innovations are differentials that meet the strategies of development, collaborating in the sense that the company can adapt to local circumstances, obtain original advantages, increase the power of negotiation and achieve a differentiated position in the market.

It is possible to point out that the main limitation of this research is the application of the interview script to only one respondent, and the application of the questionnaire restricted only to the leadership of the organization, that is, 76 respondents. The participation of other respondents could complement the discussion of the results with greater detail, showing the vision of representatives from all levels of the company.

It is believed that this research can contribute to the academic world by expanding discussions about the model used and the themes of knowledge enablers and survival and

development strategies, demonstrating their contributions to the competitiveness of a company in the electricity sector, especially considering that few studies on them were found. With regard to the researched organization, CEMIG, it is estimated that this diagnosis can bring greater knowledge about its organizational reality, providing reflections that may contribute to its marketing strengthening. With regard to the authors of this work, the result was very enlightening in terms of obtaining data in the areas of knowledge management and how to use this knowledge as a competitive differentiation, thinking about scenarios for the survival and development of companies.

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