Tecnologias da Administração e Perenidade das Micro e Pequenas Empresas

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Artigos

Tecnologias da Administração e Perenidade das Micro e Pequenas Empresas

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Resumo: O artigo, que teve como objetivo analisar as contribuições das Tecnologias da Administração, dentre elas a Gestão por Sustentabilidade Integrada, na perenidade das micro e pequenas empresas, investigou, com base na literatura e na pesquisa de campo, "de que forma as Tecnologias da Administração podem contribuir com a perenidade das micro e pequenas empresas industriais e de prestação de serviços da amostra"? Como método, os dados foram extraídos das fontes secundárias. No campo, o universo foi de 1.700 empresas industriais e 15.112 de prestação de serviços, em 170 municípios, com amostra aleatória estratificada proporcional, considerando cada categoria econômica do Produto Interno Bruto. Na investigação, a técnica utilizada foi o questionário e os dados receberam tratamento estatístico, com análise das variáveis, componentes e dimensões das Tecnologias da Administração, análise de variância e teste de correlação. Nos resultados e conclusões, sugere que as Tecnologias da Administração favorecem a perenidade das empresas industriais e de prestação de serviços da amostra.

Palavras-chave: Tecnologia, Inovação, Micro e Pequena Empresa, Gestão por Sustentabilidade Integrada, Perenidade.

Abstract: The article, which aimed at analyzing the contributions of the Technologies of the Administration, among them the Administration for Integrated Sustainability, in the perenity of the micro and small enterprises, investigated, based on the literature and on field research, investigated "how can the Technologies of Administration contribute with the perenity of the micro and small industrial companies and of services rendered in the sample"? The data were extracted from secondary sources. In the field, the universe was of 1.700 industrial companies and 15.112 of services rendered, in 170 municipal districts, with proportional stratified random sample, considering each economical category of the Gross Domestic Product. In the investigation, the used technique was the questionnaire and the data received statistical treatment, with analysis of the variables, components and dimensions of the Technologies of the Administration, variance analysis and correlation test. The results and conclusions suggest that the Technologies of the Administration favor the perenity of the industrial companies and of services rendered of the sample.

Keywords: Technology, Innovation, Micro and Small Enterprise, Administration for Integrated Sustainability, Perenity.

INTRODUCTION

To analyze variables of contemporary Administration Technologies, with investigations that seek alternatives to manage problems related to the dimensions of Technological Capacity, Administrative Technological, Institutional and Economic Social Policy. It, suggests the discovery of aspects that favor clarifying aspects not investigated and / or little researched and Its

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relation with the perenniality of Micro and Small Enterprises (MPEs), being relevant for the Administration while Social sciences, in their academic and practical aspects.

The government, entrepreneurs, managers and managers of MPE's seek in the contemporary Administration technologies, information and partnerships that improve the management of their business, such as Brazil with the MPE Basic Federal Law and its adaptations (Complementary Law 123/06, Articles 146 : 170 and 179/07, Federal Law No. 9.317 / 96) and the State of Maranhao with Law No. 9,529 / 11 - Chapter IX "From the Stimulus to Innovation and Professional Management of Microenterprises MIs and Small Businesses (EPPs)", for the implementation of Professional Management. The term Small Business - PEs also applies to Small Business - EPPs.

This article, on the theme of "Management Technologies and perenniality of MPEs," aims to analyze, through literature and field research, the contributions of Management Technologies, including Integrated Sustainability Management (GSI) in the perenniality of the industrial and services rendering companies.

A problem requires considering that the researcher is involved in the reality of the situation to be clarified. The research questions represent what the researcher wishes to clarify and can indicate among the variables, associations associations

(Triviños, 2009). The problem is: in what ways can the Technologies of Contemporary Administration contribute to the perenniality of the Industrial and Services Provisioning Companies of São Luís do Maranhao?

Research questions: What relationship could be established between the physical system, data base, software, machinery and equipment with the perpetuity of Industrial and Service Provision MPEs?

What is the relation between the formal qualification of the managers, their experiences and talents with perpetuity of the MPEs?

What is the relation of the variables of the GSI Model, as a Professional Management technology in the MPEs of the sample in the creation, maintenance, perennial maintenance and growth phases, with perpetuity of these MPEs?

In what way do products and services, the organizational system, management strategies, procedures and organizational routines impact on the sustainability of MSEs?

The hypothesis predicts a relation between two terms (Quivy & Campenhoudt, 1995). The hypothesis is: the technologies of the Administration contribute favorably in the perennial of the Industrial MPEs and of Provision of Services of São Luis of Maranhao.

THEORETICAL REFERENCE

Technology means the set of pieces of knowledge - both "practical" and "theoretical" - of know-how, methods, procedures, successful and unsuccessful experiences, and of course physical devices and

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equipment (DOSI, 2006). Technological competence refers to the company's abilities to perform innovative activities in products, processes and organization of production, organizational systems, equipment and engineering of stored projects, not only in people's minds (skills, experience, formal qualifications) but, As well as in their organizational system, routines and procedures (BELL & PAVITT, 1995; FIGUEIREDO, 2003).

Technological capacity at the organizational level is the set of resources that can be tangible, coded or intangible, tacit, coded and uncoded Incorporated in several dimensions of the organization: management and production techniques, organizational routines, organizational structures, values and norms.

(PENROSE, 1959 NELSON & WINTER, 1982 TEECE & PISANO, 1994 LALL, 1992 FIGUEIREDO, 2004). Technological accumulation and industrial innovation (Figueiredo, 2005) suggests a contribution to the management of the industrial development process in the context of developing economies, particularly in Brazil. The technological capacity of a company is stored in at least four components (Lall, 1992 Bell & Pavitt, 1995 Figueiredo, 2003), shown in figure 1.
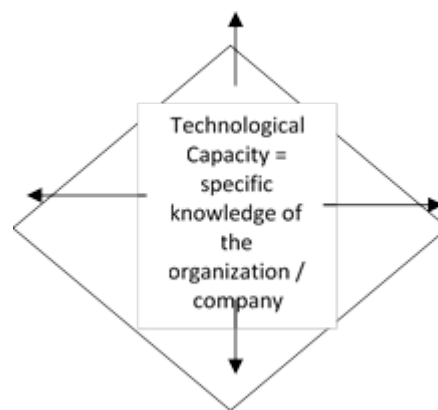
Figure 1

Visualization of the technological trajectory of developing economy companies.
Lall (1992); Bell & Pavitt (1995); Figueiredo (2003)

Physical system, database, software, machines and equipment

System (fabric) Minds of guys - Organizational and tacit knowledge and management strategies; formal qualification of Procedures and routines engineers and technicians,

organizational. operators. Your experience and accumulated talent.

Innovation, is a pioneering activity, based mainly on the internal competencies of a company to develop and induce a new product in the market. In the Schumpeterian view it is not restricted to products and processes, it involves new forms of management, new markets and production inputs. It is cumulative - there is no leap (KIM, 2005).

From the 1990s, the knowledge society stood out. It is the management of innovation and contribution of technology, generating results in companies with the support of Higher Education Institutions in research. The Administration as Social Science advanced in three aspects:

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Intellectual Capital; Knowledge management; And Management Digital Focus, in which the Management Information System (GIS) emerged to meet the needs of managing complex relationships between the organization and the environment, and at the levels of the functional hierarchy.

Studies on "TI investments" (Oliveira et al., 2014), aiming at identifying decision factors in MPEs in the service and commerce sectors, point out that investments are still scarce. In its analysis, three factors for investment decision: "Utility of the Information System" "Intensity of Competition" and "Partnerships in TI Deployment". In the managerial field, these results allow us to propose factors to be used when the interest and demand for IT investments in MPEs, comparing the benefits of TI through the correlation between the weight of each factor and the perceived returns.

The Technological Capability is incorporated in several dimensions of the organization, among them, the management techniques, highlighting (Duarte, 2009) as one of the technological capabilities, since well-managed organizations develop consistency, growth and prosperity, and poorly managed, declining and often dying.

In the work of Professional Management, Polary (2012) emphasizes the importance of the analysis of the phases of the MPEs of creation, maintenance, perennial maintenance, growth and durations (frame 2) and the application of the GSI Integrated Sustainability Management, composed of 03 dimensions, 05 components and 12 variables (frame 3), being an extension of the management term (Drucker, 2002), and different from the term "Sustainable Management of the Geoenvironmental Dimension" (Casarotto Filho & Pires, 2001). GSI is an alternative model of Professional Management for Management, which requires the manager personal professional awareness to manage with

Entrepreneurial Guidance and Integrative Vision, in favor the company's management, success and face of its variables, components and dimensions, to permanence.

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Frame 2
Phase Cycle and Processes of MPEs

N°	PHASES OF MPEs	DEFINITIONS
01	CREATION	It is the legal formalization of MPE, via a social contract and / or constitution document, in which the company is created to operate and meet a market demand.
02	MAINTENANCE	It is to fulfill the mission of creating the business, and keep working until leaving the phase of "loss" (recovery of capital invested in the creation phase), and from there, to remain in the market with the generation of own resources and operating at a profit.
03	PERENE MAINTENANCE	The company remains stable, successful in business, but without structural and physical growth. Staying alive successfully in business, and consciously avoiding expansion.
04	GROWTH	It is to grow the business in its structural and physical aspects, with the increase of the number of employees, greater market share and expansion of the clientele, increase of financial gains, among others.
05	PERENITY	It is to remain alive in the market, long-lived and succeeding generations, with constant feedbacks from the creation, maintenance and perennial maintenance phases, with the capacity to maintain structural growth, the market, the clientele, and acquire financial stability, prioritizing the development Of management technologies and of the workforce that guarantees professional maturity and can fulfill its political, economic and social function in the face of its mission.

N°	PROCESSES OF MPEs	DEFINITIONS
01	SUCCESS	MPE presents good administrative, operational and financial results, generating capacity for its continuity, providing the necessary conditions for the company to reach the remaining phases and achieve longevity, thus fulfilling its political, economic and social mission in the environment in which it operates.
02	LOW PLANNED	Closing of the activities of the MPE in the market in which it operates, carried out in a manner planned by the owner, after complying with its legal, fiscal and labor obligations. It is a professional decision not to want to continue in the business, regardless of the reason.
03	FAILURE	It is the poor result of MPE, and its inability to continue operating in the market in a viable way to administrative, technical, operational and financial matters, being compromised the relation with the employees, clients and the results of financial profit.
04	MORTALITY	Insolvency of MPE, ceasing the normal operation of its administrative, technical and operational activities, for not achieving economic and financial success. It ceases to exist functionally with an active organization, reflecting negatively on the economic and social development of the environment in which it operates.

Polary (2012)

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Frame 3

he GSI model integrates 03 dimensions, 05 components and 12 variables

MODEL	DIMENSIONS	COMPONENTS	VARIABLES
GSI	Administrative Technological	Management	Skills and Management Skills - Professional Management-GSI, based on Entrepreneurship.
			Feasibility studies: technical, economic and financial.
		Technology	Technological support (machinery and equipment, systems and working methods).
			Industrial efficiency level.
	Political Institutional	Policies	Public Policies of the Federal, State and Municipal Government.
			Legal, tax and labor aspects.
		Strategies	Local Strategies and Political Institutional Partnerships, Industrial Segment and Civil Society.
			Industrial Development Plan - IDP-2020.
	Economic Social	Economic and Social Indicators	Qualified industrial labor force.
			Investment attractiveness: internal, external and local government.
			Preservation of the local environment of industry.
			Business Location.

Polary (2012)

The GSI model is based on the Theory of Entrepreneurship in two approaches to literature: managerial, in McClelland's Theory (1970) and Organization and Administration Theories, and in the perspective of corporate strategies and modes of strategic management, Lumpkim And Dess (1996); and the economic one, in Schumpeter's (1934) studies, introduced in the Social Sciences by Economic Theory. The model was analyzed as one of the Technological Capacity Dimensions at organizational level "management techniques", and applied in the MPEs of the industrial sample (Polary, 2012), which also investigated its phases and processes, and the MIs and EPPs (POLARY et al. 2016). It highlights the importance of entrepreneurship for the countries' economies, where their teaching began in the United States in 1947 at the Harward School of Business (Katz, 2003). Entrepreneurs are "differentiated people, who have unique motivation, and want to be recognized and admired, referenced and imitated, want to leave a legacy." Dornelas (2001). In an analysis of the global and Brazilian panorama of entrepreneurship, data from the Global Entrepreneurship Monitor GEM Brazil (Greco et al. 2008, 2010) show that the Entrepreneurship Rate in Initial Stage of TEA of Brazil in 2008 (12.02) 13th place in the world ranking. The analysis of the entrepreneurship rate of the adult population in Brazil (18 to 64 years of age in each country) makes it possible to compare the intensity of

the entrepreneurial activity of the GEM countries (GEM, 2015). Grphic 1 shows the countries' TEA rates, grouped according to the development phase, driven by factors, efficiency, or innovation. From 2014 to 2015, Brazil moved from 13th to 8th place in the ranking of the 31 countries of efficiency-driven economies, with TEA of 17.2% in 2014 and 21.0% in 2015, the highest in the group, surpassing the Countries of the BRICs, the United States and Germany.
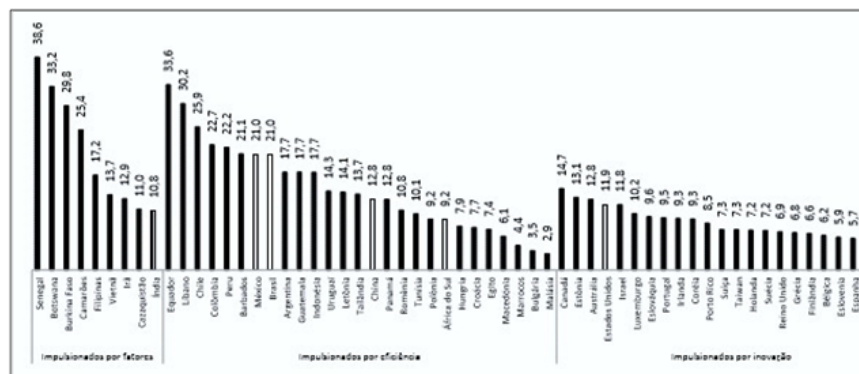
Graphic 1
Initial entrepreneurship rate (TEA) of GEM participating countries grouped
according to the economic development phase (this classification is based
on the Global Competitiveness Report - Publication of the Economic
Forum considering PIB per capita and the share of primary goods) - 2015
GEM (2015)

Regarding the levels of development, it can be seen from the distribution curves that the highest rates of ASD are concentrated in the group of factor driven countries and the lowest in countries driven by innovation. A GEM study, in partnership with the World Economic Forum (2015), identified a negative correlation between the level of development of countries (factors, efficiency and innovation) and initial entrepreneurship rates (TEA). It suggests a better analysis of the variables of this context by the managers, when of their decisions of investments in the countries.

These references are coherent with the research on "the impact of the technologies of contemporary management on the peremptory MPEs", among them the GSI based on entrepreneurship.

METHOD

The research method: the methodology covers the methods of approach, procedures and techniques (Marconi & Lakatos, 2007). Malhotra (2006) describes measurement scales; Ulrich et al. (2009), ranging from 1 to 10 points, which served as the basis for the questionnaire score of this research. Follow the method.

In the literature: Delimitation: data extracted from the secondary sources, analyzed in the universe of MSEs and the GSI Model. The

research line was "Management Technology", of organizational studies of the Brazilian reality of the Doctoral Program in Administration of FGV / EBAPE and the Research Group "Administration, Management and State-AGE" CNPq - Applied Social Sciences - Administration area And Management of MPEs.

Method: hypothetical deductive - for the construction of systemic concepts and hypotheses deduced from this theoretical explanatory model (QUIVY & CAMPENHOULD, 1995).

Approaches and Theories: Management Technologies; And Entrepreneurship in two approaches to literature, economics, and management that underpinned the GSI Model.

In the field research: delimitation, universe and sample: the data of 2012 were collected in the universe of 1,700 industrial MPEs of Maranhao

(FIEMA, 2006). A proportional stratified random the universe of the MIs and EPPs Industrial and sample of 134 MPEs (tables 1 and 2) was extracted, Service Provision of São Luís/MA (JUCEMA, 2016). A considering the participation of each economic sample of 38 MPEs was extracted for accessibility category in the PIB (frame 1); and data from 2016 in (Vergara, 2007), according to tables 3 and 4.

Table 1

Population for stratification, according to municipalities by size of industries

N°	Counties	MICRO Quantity	SMALL Quantity	TOTAL
	Alcântara	01	-	01
	Bacabal	36	09	45
	Balsas	59	21	80
	Caxias	17	20	37
	Cajapió	04	-	04
01 02	Imperatriz	192	97	289
03 04	Lago da Pedra	16	03	19
05 06	Paço do Lumiar	04	01	05
07 08	Raposa	02	-	02
09 10	Rosário	08	08	16
11 12	São João dos Patos	11	-	11
13 14	São José de Ribamar	21	09	30
	São Luís	739	380	1119
	Timon	32	10	42
	Total	1142	558	1700

Adapted from FIEMA (2006) and Polary (2012)

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Table 2

Significant samples stratified industries, according to municipalities by size of industries

Nº	Counties	MICRO Quantity	SMALL Quantity	TOTAL
01	Alcântara	01	-	01
02	Bacabal	03	02	05
03	Balsas	06	02	08
04	Caxias	02	02	04
05	Cajapió	01	-	01
06	Imperatriz	16	08	24
07	Lago da Pedra	03	02	05
08	Paço do Lumiar	02	01	03
09	Raposa	01	-	01
10	Rosário	02	01	03
11	São João dos Patos	01	-	01
12	São José de Ribamar	02	01	03
13	São Luís	51	22	73
14	Timon	02	-	02
	Total	93	41	134

Adapted from FIEMA (2006) and Polary (2012)

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Frame 1

PIB14 municipalities of the sample of 134 MPEs researched in the Industrial Sector-MA

Nº	Counties	PIB a preço corrente	%
1	Alcântara	R$65.418.000,00	0,17%
2	Bacabal	R$505.600.000,00	1,27%
3	Balsas	R$1.120.221.000,00	2,82%
4	Cajapió	R$22.781.000,00	0,06%
5	Caxias	R$825.527.000,00	2,08%
6	Imperatriz	R$2.000.735.000,00	5,03%
7	Lago da Pedra	R$152.435.000,00	0,38%
8	Paço do Lumiar	R$291.564.000,00	0,73%
9	Raposa	R$100.920.000,00	0,25%
10	Rosário	R$134.819.000,00	0,34%
11	São João dos Patos	R$89.164.000,00	0,22%
12	São José de Ribamar	R$473.407.000,00	1,19%
13	São Luís	R$ 15.337.347.000,00	38,58%
14	Timon	R$715.427.000,00	1,81%
	TOTAL PIB (municipalities participating in the research)	R$ 21.835.365.000,00	54,93%
	TOTAL PIB (municipalities not participating in the research)	R$ 17.918.346.000,00	45,07%
	PIB Maranhao	R$ 39.753.711.000,00	100%

PIB of the municipalities of Maranhao – 2009 (IBGE - 2012).

Table 3

Population of MIs and EPPs active for stratification in São Luís-MA by size

Nº	Counties	Company Size		TOTAL
		MicroenterpriseMI	Small Business Company-EPP	
		Quantity	Quantity	
01	São Luís	14.183	929	15.112

JUCEMA (2016)

Table 4

Accessibility samples of MIs and EPPs active for stratification in São Luís-MA by size

Nº	Counties	Company Size		TOTAL
		MicroenterpriseMI	Small Business Company-EPP	
		Quantity	Quantity	
01	São Luís	22	16	38

JUCEMA (2016)

Data collection and analysis: the technique was the questionnaire. Data from 2012 received statistical treatment, with exploratory data analysis,

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Correlation Test, Regression and Multiple Correlation and in 2016, exploratory analysis of data with averages and percentages.

Categories of analysis: guarantee rigor (Vieira, 2004), which were: size of MSEs Importance of the variables in each phase of the MPEs: creation, maintenance, perennial maintenance, growth and perenniality variables, relevant to the permanence of MSEs in the dimensions of Technological Capacity and Administrative, Technological, Institutional and Economic Social Political of the GSI Model.

Limitations of the method: the universe of MPEs, due to Brazil having a large territorial dimension, and Maranhao 217 municipalities (IBGE, 2009), was soon delimited to the MPEs of the Industrial Sector and Service Provision of Maranhao; Little literature and empirical work on this subject that would allow an indepth study of the theory (POPPER, 1975).

Conscious of the limitations, we consider that the method was adequate and acceptable to support the research and the analysis of the data with consistency.

RESULTS

In the analysis of the results of the survey in the

Microenterprises - MIs, and also in the Small Companies - Industrial PEs of the sample (Polary, 2012), statistical procedures were: analysis of means and percentages of variables, components and dimensions of GSI, The Variables, Regression and Multiple Correlation.

It was constituted by the analysis of the 12 variables of the GSI Model, which among the predominant 06, "Competences and managerial skills of the members that direct and of thers that administer or advise the business - Professional Management GSI, based on Entrepreneurship ", in the view of managers, is the one that most positively influences the Management, Success and Perennial in the MIs of the sample, with an average of 8.99 (table 5) and in the PEs with a mean of 8.95 (table 6

Table 5 - The 06 variables of the GSI Model that most positively influence the Management, Success and Perennial of the industrial MIs of the State of Maranhao, in the view of the managers. Variables n % Average Minimum Maximum DP 1. Management skills and abilities of the managing partners and others who administer or advise the business - Professional Management (GSI), based on Entrepreneurship.. 92 98.92 8.99 1 10 1.5442 2. Technological support (machinery and equipment, systems and working methods)............................... 90 96.77 8.86 1 10 1.5107 3. Make feasibility study: technical, economic and financial... 88 94.62 8.83 3 10 1.5773 4. Qualified industrial labor force............................. 92 98.92 8.63 1 10 2.1315 5. Level of industrial efficiency................................. 92 98.92 8.62 4 10 1.4207 6. Preservation of the local environment of the Industry.. 90 96.77 8.58 1 10 2.1093 Source: Polary (2012). Tabela 6 – The 06 variables of the GSI model that most positively influence the Management, Success and Perennial of the industrial PEs of Maranhao. Variables n % Average Minimum Maximum DP 1. Management skills and abilities of the managing partners and others who administer or advise the business - Professional Management (GSI), based on Entrepreneurship.. 41 100.00 8.95 7 10 1.0476 2. Technological support (machinery and equipment, systems and working methods)............................... 41 100.00 8.80 7 10 0.9992

Polary (2012)

Variables	n	%	Average	Minimum	Maximum	DP
3. Qualified industrial labor force...............................	41	100.00	8.61	5	10	1.4980
4. Level of industrial efficiency....................................	40	97.56	8.58	6	10	1.1068
5. Location of the Small Business.....	41	100.00	8.56	4	10	1.4841
6. Preservation of the local environment of the Industry...	41	100.00	8.44	1	19	2.7023

y the results of the Multiple Regression and Correlation of the 06 variables that most positively influence the Management, Success and Perenniality of the MIs (Independent - table 5) and the 06 most important for the success of the MIs in the perpetuity phase (Dependents - table 7) of the Model GSI, it was verified that the variable "Do feasibility studies: technical, economic and financial" (frame 4), presented a substantial positive correlation, according to the regression equation $Y= a + b_1x_1 + b_2x_2 + ... + b_6x_6$. F of Regression = 12.2673. $p < 0.0001$. Coefficient of multiple determination $(R^2_{xy}) = 0.4612$ and multiple correlation coefficient $(R_{xy}) = 0.6791$.

Variables	n	%	Average	Minimum	Maximum	DP
7. Management skills and abilities of the managing partners and others who administer or advise the business - Professional Management (GSI), based on Entrepreneurship.................................	92	98.92	8.99	1	10	1.5442
8. Technological support (machinery and equipment, systems and working methods)...............................	90	96.77	8.86	1	10	1.5107
9. Make feasibility study: technical, economic and financial.............................	88	94.62	8.83	3	10	1.5773
10. Qualified industrial labor force......................	92	98.92	8.63	1	10	2.1315
11. Level of industrial efficiency.........................	92	98.92	8.62	4	10	1.4207
12. Preservation of the local environment of the Industry...	90	96.77	8.58	1	10	2.1093

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Table 5 - The 06 variables of the GSI Model that most positively influence the Management, Success and Perennial of the industrial MIs of the State of Maranhao, in the view of the managers.

Variables	n	%	Average	Minimum	Maximum	DP
1. To reinvest in Microenterprises to better serve their workforce, their clientele and fulfill their economic and social function in order to remain successful in the market, in the view of the managers..................	90	96.77	9.38	6	10	0.9189
2. Prioritize the qualification of industrial labor and maintain the required levels of efficiency and productivity of the sector..	93	100.00	9.25	1	10	1.4192
3. Prioritize the technical and professional development of the partners they direct and of others who administer or advise the company..	93	100.00	9.22	3	10	1.3092
4. Preservation of the local environment of industry..............................	92	98.92	8.88	3	10	1.5956
5. Use the Industrial Development Plan - PDI 2020...........	84	90.32	7.24	1	10	2.8523
6. Public policies of the Federal, State and Municipal Governments, attractive investments and microenterprise partnerships with Government and private nterprise.............................	91	97.85	6.77	1	10	3.0553

Polary (2012)

Frame 5

Multiple linear regression between the variables that most positively influence the Management, Success and Perennity (Independent) and Reinvest in the PEs to better serve their workforce, the clientele and fulfill their economic and social function to remain successful in the market (Dependent) In the industrial PEs of Maranhao

Independent Variables (Peddler)	Partial regression coefficient	t	P
Constant (Intercept)	1.4039(a)	-	-
Skills and managerial skills of the managing partners and others who administer or advise the business - Professional Management (GSI), based on Entrepreneurship	0.0234 (b1)	0.2571	0.7977
Technological support (machinery and equipment, systems and working methods)	0.2817 (b2)	2.9741	0.0038
Conduct feasibility studies: technical, economic and financial	0.3615 (b3)	3.6469	0.0004
Qualified industrial labor force	- 0.0444 (b4)	- 0.7225	0.4719
Level of industrial efficiency	0.2301 (b5)	2.3558	0.0207
Preservation of the local environment of industry	0.0414 (b6)	0.5946	0.5536

Polary (2012)

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Frame 4 - Multiple linear regression between the variables that most positively influence the Management, Success and Perennial (Independent) and Prioritize the qualification of industrial labor and maintain the levels of efficiency and productivity required of the sector (Dependent) in the industrial MIs of Maranhao.

Conclusion: F is significant for p <0.0001, at least one of the Independent variables (Peditoras) influence the variable Dependent The coefficient of determination means that 46.12% of the Y variation can be explained by the model, the remaining (53.88%) are inexplicable and are due to other factors or to chance The variable that has the smallest value of p is the variable Make feasibility studies: technical, economic and financial, so it is the one that most explains the variation of Y.

In the PEs, it was verified by the results of the Regression and Multiple Correlation of the six (6) variables that most positively influence the Management, Success and Perennial (Independent - table 6) and the 06 most important for success in the perennial phase (Dependent - Table 8) ", that the variable" Qualified industrial labor "(frame 5) presented substantial positive correlation, according to the regression equation $Y = a + b_1x_1 + b_2x_2 + \ldots + b_6x_6$. F of Regression = 4.0576. P = 0.0038. Coefficient of multiple determination (R^2xy) = 0.4173 and multiple correlation coefficient (Rxy) = 0.6460.

Tabela 6 – The 06 variables of the GSI model that most positively influence the Management, Success and Perennial of the industrial PEs of Maranhao.

Variables	n	%	Average	Minimum	Maximum	DP
7. Management skills and abilities of the managing partners and others who administer or advise the business - Professional Management (GSI), based on Entrepreneurship................................	41	100.00	8.95	7	10	1.0476
8. Technological support (machinery and equipment, systems and working methods)................................	41	100.00	8.80	7	10	0.9992
9. Qualified industrial labor force................................	41	100.00	8.61	5	10	1.4980
10. Level of industrial efficiency................................	40	97.56	8.58	6	10	1.1068
11. Location of the Small Business................................	41	100.00	8.56	4	10	1.4841
12. Preservation of the local environment of the Industry................................	41	100.00	8.44	1	19	2.7023

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Variables	n	%	Average	Minimum	Maximum	DP
1. Prioritize the qualification of industrial labor and maintain the required levels of efficiency and productivity of the sector	41	100.00	9.20	5	10	1.1878
2. Reinvesting in Small Businesses (PEs), to better serve the workforce, the clientele and fulfill its economic and social function in order to remain successful in the market..	41	100.00	9.10	4	10	1.2001
3. To prioritize the technical and professional development of the members who direct and of others who manage or advise the business the PEs..............	41	100.00	9.07	6	10	1.2528
4. Preservation of the environment.............................	41	100.00	8.56	4	10	1.5008
5. Use the Development Plan. Industrial - PDI 2020..	40	97.56	8.20	4	10	1.7127
6. Public Policies of Federal, State and Municipal Governments, attractive investments and partnership with Small Businesses with Government and private initiative.............................	41	100.00	7.51	2	10	2.0140

Variables (Peddler) Constant (Intercept) Competencies and management skills of the managing partners and others who administer or advise the business allied to Professional Management (GSI) and Entrepreneurship. Technological support (machinery and equipment, systems and working methods) Qualified industrial labor force Level of industrial efficiency Location of the Small Business Preservation of the local environment of industry	regression coefficient	T	p
	1.9189(a)	-	-
	0.2420(b1)	1.4464	0.1571
	- 0.2618 (b2)	- 1.3601	0.1827
	0.3233(b3)	2.7789	0.0088
	0.3970(b4)	2.1712	0.0369
	0.0773(b5)	0.6751	0.5042
	0.0550(b6)	0.7674	0.4481

Conclusion: F is significant for $p < 0.0001$, at least one of the independent variables influences the dependent variable. The coefficient of determination means that 41.73% of the Y variation can be explained by the model, the remaining 58.27% are inexplicable and If due to other factors or at random, the variable that has the smallest value of p is the skilled industrial labor variable, so it is the one that most explains the variation of Y.

The results of this research express, through the tests, the correlation of all variables of the GSI Model (frame 3), applied in the MIs and PEs of the sample (Polary, 2012), which makes possible an analysis of the effectiveness of the model in the view of the managers , On the management, success, permanence and phases and processes of MPEs, and suggest the continuity of application of this model in service and commercial MPEs. These results are consistent with the studies and research of ILDA (1984) and SOUZA (2009).

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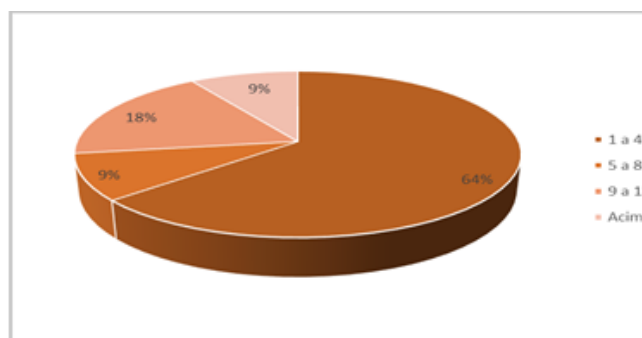
In another research (Polary et al., 2016), on the Technologies of Contemporary Administration, among them the GSI Model in Microenterprises MIs and Small Enterprises EPPs in the industrial and services sectors in São Luís do Maranhao, the results express: as for TEM, 64% of MIs are in the range of 1 to 4 years 9% between 5 and 8 years 18% between 9 and 12 and 9% over 12 years in EPPs, 50% are over 12 years, 25% up 4 years 19% between 5 and 8 years and 6% between 9 and 12 years (figures 2 and 3).
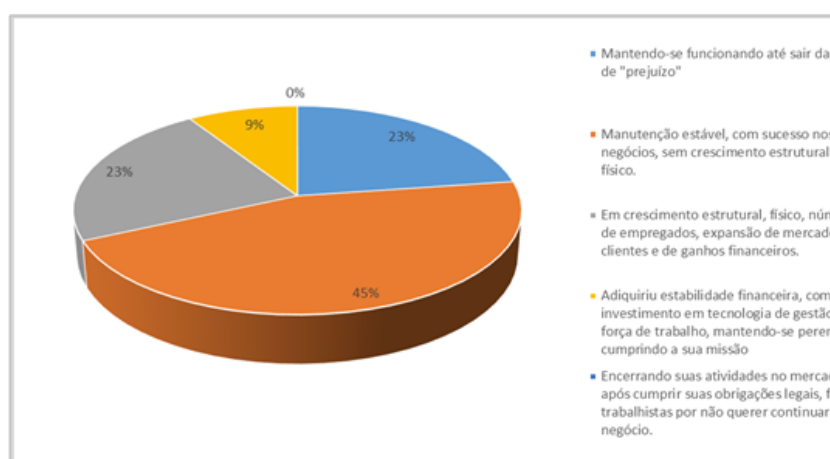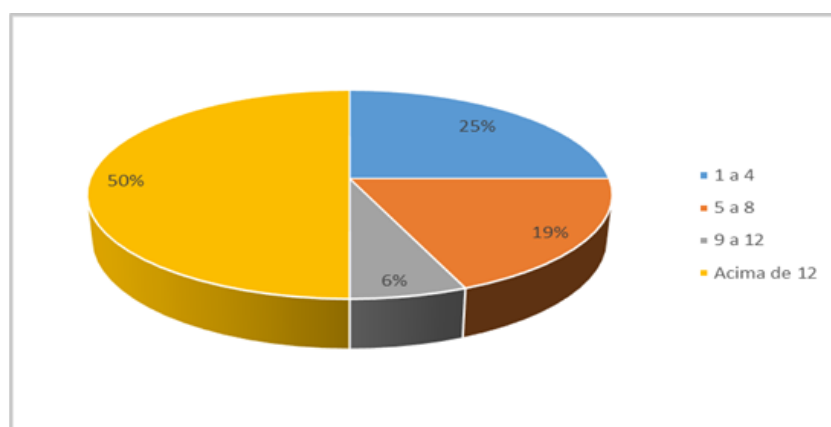

Figure 4 – Phases of MIs.

In analogy to the MPEs phases (Polary, 2012), the majority of MIs (45%) are in the stable maintenance phase; 23% in the growth phase; 23% remaining in business to recover the invested capital; and 9% acquired

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financial stability with investments in several areas; In the EPPs, 63% are in the stable maintenance phase, with success in business, without structural and physical growth "; 31% in the growth phase, structural, physical, number of employees, customers and financial gain; And 6% acquired financial stability, with investment in management technology and the workforce, remaining perennial and fulfilling their mission (figures 4 and 5).
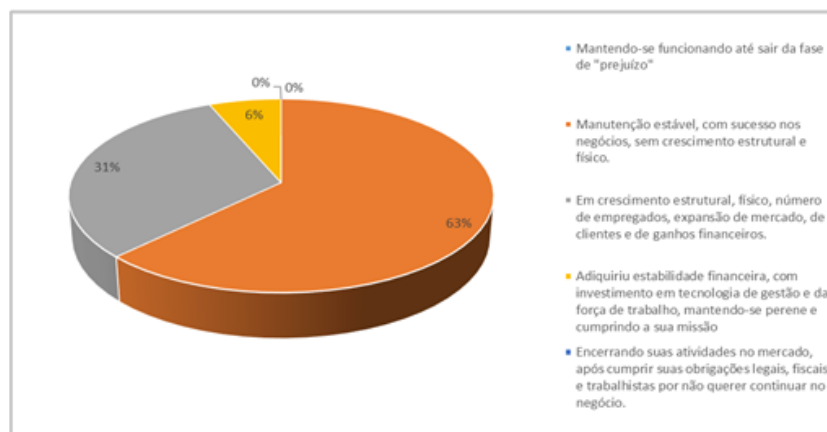
As to the relevance of the variables of the GSI model it was verified that the one of higher average in the MIs was: Preservation of the environment (8,18); and in the EPPs was: Business location (8.68), according to tables 9 and 10, which show the analysis of all variables. Regarding the GSI technology variables present in the MIs and EPPs that contribute the most to the perenniality, products and services predominated, with averages of 8.75 and 8.36, respectively (tables 11 and 12), which show the Analysis of all variables.

Table 9 - Relevance of the variables of the GSI Model for the perenniality of the MIs of the sample Source: Polary et al. (2016).

Table 11 - Technologies present in the MIs that contribute most to the perenniality. Source: Polary et al. (2016).

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The physical system, database, software, machines and equipment	7,50
Individuals' minds; Knowledge and qualification; Experience and accumulated talent .... Products and services	8,25
	8,75
Organizational system and management strategies; Procedures and organizational routines ...... Management for Integrated Sustainability - GSI as one of the management technologies, Based on entrepreneurship	8,12
	7,50

Local Strategies and Political Institutional Partnerships, Industrial Segment and Civil Society	6,43
Industrial Development Plan	5,25
.... Skilled labor force	7,18
.... Investment	6,18
attractiveness: internal, external and local government	
Preservation of the environment	7,75
.... Business Location	
	8,68

Tabela 12 - Technologies present in the EPPs that contribute most to the perenniality.

The physical system, database, software, machines and equipment	7,77
Individuals' minds; Knowledge and qualification; Experience and accumulated talent	7,18
Products and services	8,36
Organizational system and management strategies; Procedures and organizational routines ...... Management for Integrated Sustainability - GSI as one of the management technologies, Based on entrepreneurship	7,31
	7,40

DISCUSSION

It is concluded from the analysis of literature and field research that in Brazil and other countries surveyed, the difficulties and challenges to keep perennial organizations persist, but there was a significant advance of governments and private initiative regarding the policies favoring Micro and Small Businesses - MPSs, in spite of recognizing their economic and social importance. In the analysis of the Integrated Sustainability Management Model (GSI) (Polary, 2012), it was found to be a viable alternative to MPEs, in which two relevant conclusions are highlighted: 1. The Management of MSEs, when applied in the GSI Model, Favors the Perenniality of the industrial MPEs of the sample; And 2. The permanence of industrial MPEs has a positive impact on the Industrial Development of the State of Maranhao.

As for the 12 variables of the GSI Model most important for the success of the industrial MPEs in its five phases, it was concluded that "Competences and managerial skills of the managing partners and others

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that administer or advise the business - GSI Professional Management" was the The most important variable for the success of MPEs in the creation, maintenance, perennial maintenance and growth phases, and for the sustainability phase was "Prioritizing the qualification of industrial labor".

In the conclusions of Polary et al. (2016), of application of the GSI Model, as one of the Administration technologies and its influence in the perenniality of the Microenterprises MIs of the sample, predominated the variable: preservation of the environment, and in the EPPs, location of the business. As for the GSI Model technologies present in the MIs and EPPs that contribute most to its sustainability, the "products and services" variable was highlighted for both.

The technologies revolve around the products and services of the company, because it is through them that some kind of value will be offered to the customers. The object of supply of the MIs and EPPs represent not only the maintenance of their customers and establishment of competitive advantage, but also a means of reducing costs through industrial efficiency and effective working methods, as verified in the variable "products and services" which obtained higher mean for MIs and EPPs.

As to the level of formal qualification of managers, their experience and talent in the MPEs of the sample (Polary et al., 2016), 39% of the managers have a medium level, 50% higher level and 11% with a specialization or a master's degree. "knowledge and experience in the area in which it operates and seek its development" to act in the MIs and EPPs ", for the managers of the MIs the average was 8.27 and the EPPs were 9.06.

These conclusions give answers to the problem investigated, to the research questions raised and confirmation of the hypothesis, having thus reached its objectives. The expectation is that these results and conclusions contribute to further research in MPEs in the area of Management Technologies, among them, Management for Integrated

Sustainability GSI, as one of the technologies and innovations that favors the perpetuation of MPEs and the development of countries.

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