Evaluation of the performance of financial management in SMEs of the manufacturing industrial sector in Ciudad Nezahualcóyotl, State of Mexico

Evaluación del desempeño de la gestión financiera en las Pymes del sector industrial manufacturero en Ciudad Nezahualcóyotl, Estado de México

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Abstract

Given the influence of SMEs in the creation of wealth and as a strategic sector for the development of the country, they must implement financial planning to develop their competitive advantage, visualizing business opportunities with adequate management and analysis of information, together with strategic objectives to know future scenarios, reduce exposure to financial risk contributing to efficient decision making. The objective of this research was to evaluate financial management in SMEs in the manufacturing industrial sector of Ciudad Nezahualcóyotl in the State of Mexico, to know the factors that contribute to their competitive advantage and generate a proposal for an adequate and accessible Financial Planning model, which allows them to visualize their internal potential contributing to their development and competitiveness, since their permanence and growth would improve the employment, poverty and competitiveness indices that the region needs. It is a mixed investigation that used the qualitative method in the exploration and non-experimental documentary and quantitative investigation stage, applying a questionnaire to collect information on 47 indicators of nine variables related to financial planning, of which 23 indicators are valued as unsatisfactory in its performance.

Financial planning, Competitive advantage, Financial results

Resumen

Dada la influencia de las Pymes en la creación de la riqueza y como sector estratégico para el desarrollo del país, deben implementar la planeación financiera para desarrollar su ventaja competitiva, visualizando oportunidades de negocio con una adecuada gestión y análisis de la información, con objetivos estratégicos para conocer escenarios futuros, disminuir la exposición al riesgo financiero contribuyendo a la toma de decisiones eficiente. El objetivo de esta investigación fue evaluar la gestión financiera en las Pymes del sector industrial manufacturero de Ciudad Nezahualcóyotl en el Estado de México, para conocer los factores que contribuyen a su ventaja competitiva y generar una propuesta de modelo de Planeación Financiera adecuado y accesible, que les permita visualizar su potencial interno contribuyendo a su desarrollo y competitividad, ya que su permanencia y crecimiento mejoraría los índices de empleo, pobreza y competitividad que la región necesita. Es una investigación mixta que utilizó el método cualitativo en la etapa de exploración e investigación documental y cuantitativa no experimental aplicando un cuestionario para recabar la información sobre 47 indicadores de nueve variables relacionadas a la planeación financiera de los cuales 23 indicadores están valorados en poco satisfactorio en su desempeño.

Planeación financiera, Ventaja competitiva, Resultados financieros

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Introduction

Small enterprises have been studied from various perspectives, given the influence they have on wealth creation, as a sector of strategic importance for the development of the country, and especially for the State of Mexico, since their permanence and growth would improve the employment, poverty and competitiveness indices that the region needs.

INEGI has pointed out that the average life span of a newly created company in Nezahualcóyotl Estado de México is 6.2 years. The lack of financial planning in SMEs in Nezahualcóyotl puts them at a disadvantage compared to their competitors, they lose business opportunities due to inadequate of management and analysis financial information, the lack of strategic objectives leads to a lack of knowledge of possible scenarios and courses of action with a high exposure to financial risk both internally and externally, contributing to inefficient decision making.

This research aims to evaluate financial management in manufacturing industrial SMEs in Ciudad Nezahualcóyotl in the State of Mexico to understand the factors in financial management that contribute to their competitive advantage and financial performance.

The hypothesis proposed for this research is: the set of tools for financial planning and valuation will allow timely decision making of a strategic nature contributing to improve their competitive advantage and financial results of SMEs in the industrial manufacturing sector of Ciudad Nezahualcóyotl in the State of Mexico.

The objective of this research is to evaluate the financial management of SMEs in the industrial manufacturing sector of Ciudad Nezahualcóyotl in the State of Mexico, in order to know the factors in financial management that contribute to their competitive advantage and generate a proposal for an appropriate and accessible Financial Planning model, which allows them to visualise their internal financial potential contributing to their development and competitiveness, since their permanence and growth would improve the employment, poverty and competitiveness indices that the region needs.

Definition of financial planning

(Azarenkova et al., 2017) discusses methods and models of financial forecasting and proposes their unification. points out that financial planning is an important element of management, which ensures the achievement of strategic priorities, it is an essential tool for achieving the main objectives of the company profit maximisation and minimisation of company cost. (p.39)

(Gamage et al., 2020) "Defeating financial barriers, having sufficient capital, managing cash flows and the willingness to access global capital are identified as the prior suggestions to face global competition." (p.29)

Financial planning in this model has strategic and business philosophy bases, it defines the clear direction in the project management system based on the business philosophy as a competitive strategy (González Viloria, 2011).

The model contemplates the use of financial planning tools such as budgets to obtain the most profitable use of resources. Providing an integrative system that helps the small entrepreneur to focus on medium-term financial objectives in order to obtain higher returns (Parra & Madriz, 2017).

Without losing sight of the requirement of using an adequate accounting system that few SMEs have managed to consolidate; in this regard the challenges of the accounting system revealed by (Ibrahim et al., 2020) in their research Accounting Information Systems in SMEs are more towards operational issues that are aligned with the business strategy, one of the main problems is related to data duplication, data inaccuracy, as well as the difficulty to access the data; it is time consuming and inefficient (p. 51). (Parra & Madriz, 2017)" One of the current needs of SMEs is to use management accounting methods, such as budgeting, aimed at planning and controlling profits, the success of any economic entity depends on the expertise to apply the stages of the management process and especially the planning and setting of revenue, expenditure and profit targets to be achieved competently with a systematic approach" (p.36).

OCAÑA-DE LA CRUZ, Eunice & MOLINA-MOREJON, Víctor Manuel. Evaluation of the performance of financial management in SMEs of the manufacturing industrial sector in Ciudad Nezahualcóyotl, State of Mexico. Journal of Business and SMEs. 2023 Parra & Madriz, J. L. (2017). In his work "Budget as an instrument of financial control in small family businesses" he states that:

It is highlighted that they do not have a preliminary project where the dependence between total costs, income and profits is considered, also commercial activities are out of control which can lead to carelessness in transactions and poor results. SMEs lack project management where the flow of expenses and investment and the number of items to be produced are calculated (p.45).

(Saavedra-García et al., 2018) The main findings of their survey show that financial information systems are used in a rudimentary way, especially in microenterprises. It is also observed that there is an association between the manager's schooling and the professionalisation of the financial area. In the same way, it was found that financial management is reduced in this type of company, particularly with regard to the formulation of forecasts and financial analysis ratios. (Saavedra-García et al., 2018).

The SME manager as an ongoing business has developed valuable experimental knowledge that has allowed him to evolve from a reactive attitude in exercising command and decision-making in his administrative process to a proactive and innovative attitude that has allowed him to remain in a very competitive environment (Hernández Palma, 2011).

(Roa, María Del Pilar Báez & Martínez, 2018) if entrepreneurs do not have the knowledge to carry out adequate financial management, they hinder good performance and competitiveness.

(Azarenkova al., 2017)The et introduction of financial planning is a system that increases the efficiency of performance, allows to predict the financial results of the company, improve the efficiency and effectiveness of exploitation of resources, receive accurate information for decisionmaking, to improve the performance and competitiveness of the company (p.55).

The business environment becomes unpredictable day by day, the changes derived from endogenous causes such as non-existent planning, organisation without objectives, low levels of competence and management or extrinsic causes such as epidemics, market behaviour, governmental decisions, inflation, destabilise the competence of the companies, management and profitability become complicated (Quishpe, M. B. G., & Vaca, 2022).

INDEPENDENT	CONCEPTUAL DEFINITION
VARIABLES	
Value proposition	Understanding the market and customer relationships and constructive prototype-oriented analysis to develop the idea step by step (Gazca Herrera et al., 2020). Creates value for a market segment through a specific mix of elements (Osterwalder & Pigneur, 2011).
Vision	The components are: customer in the target market, marketing offerings and values provided to customers, the technology they use, concern for survival, growth, profit, (Esen & Oguz 2019) personality of the organisation highlighting its unique strategic approach.(Munelo & Atienzo, 2023)
Mission	Mission: to promote positive social and economic change through innovative business models (Osterwalder, A., & Pigneur, 2011). As part of its strategy, it has a positive impact on its customers, the satisfaction and professional development of its employees, the environment and the surrounding community, and current legislation (Huerta-Estévez & Andrade- Estrada, 2021).
Financial Information Management	"The organisation should determine the knowledge necessary for the operation of its processes and to achieve conformity of products or services; it should be maintained and made available as necessary. (ISO copyright office, 2015). Manage from its creation process, exchange, combination, application to clarify and enhance the organisational process, preserve and disseminate it (Villasana Arreguín et al., 2021).
Competitive strategy	In line with the strategic intent, customer-centric strategies have proven to be the most efficient in companies' efforts to adapt their value chains to customers' needs and expectations. (Guerola- Navarro et al., 2021).

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Financial planning	Cost leadership, differentiation, cost focus and differentiation focus. Porter (1980) Innovation, risk-taking and proactivity" (Lechner & Gudmundsson, 2014; Strategy is the determination of a firm's basic long-term goals and objectives, together with the adoption of courses of action and the allocation of resources necessary for the achievement of the objectives Chandler (2003) Financial planning is a system that increases the efficiency of performance, allows predicting the financial results of the company, improving the efficiency and effectiveness of the exploitation of resources, receiving accurate information for decision-making, and improving the performance and competitiveness of the company (Azarenkova et al., 2017) Integrative system that helps the small entrepreneur to focus on medium-term financial goals for
	medium-term financial goals for higher returns (Parra & Madriz, 2017)
Financial analysis	It represents a fundamental instrument in the work of the financial manager, it is the mechanism to evaluate the situation of liquidity, solvency, efficiency in operations, new sales strategies, collections, the need for financing and the yield generated; as well as to verify whether the financial objectives achieved are in accordance with what was planned. (Nava Rosillón, 2010) Percentage of unit participation of each source of financing in the total amount and the financial structure of a company considers the total financing of its assets, which refers to all liabilities and capital on the balance sheet of a company (Valencia, H, 2009).
Competitive advantage	Achieve leadership and stay there. Porter (2008) Establishing alliances with customers, based on parameters of quality and excellence; defining, implementing and executing the strategy should lead to the construction of a competitive advantage. Serna (2008) Customer relationship management as the solution with the greatest impact and relevance in the maintenance and enhancement of the advantage (Guerola-Navarro et al., 2021).

	The permanence of				
	microenterprises from the strategic				
	approach and from the tactical-				
	operational approach has the				
	following factors: the social				
	dynamics of employees,				
	consolidation, social cohesion for				
	action, differentiation,				
	organisational identity,				
	formalisation for governance and				
	efficiency in processes. (Becerra				
	Bizarrón & Cortes Palacios, 2018).				
Financial	They come from the performance				
performance	of financial operations and refer to				
Perrormanee	the levels of liquidity, profitability				
	and risk that a company goes				
	through in a given period. These				
	results are a consequence of the				
	management that has been carried				
	out in the entity, so they are a good				
	indicator of corporate performance;				
	in addition, they allow the survival				
	and development of organisations.				
	(Acosta-Medina et al., 2019).				

Table 1 Conceptual definition of independent variablesSource: Own elaboration.

Methodology

It is a mixed qualitative study in the stage of exploration and documentary research and nonexperimental quantitative, the temporality is transversal since the sampling occurs only once; it starts from a general hypothesis and seeks to refute it by discovering conclusions from the sample so it can be classified as hypothetical deductive (Ishtiaq, 2019).

The literature review was conducted and the conceptual model was designed using Atlas Ti. As a theoretical basis for the design of the instrument for the collection of information, its construction was based on the documentary research of the theoretical framework and the operationalisation matrix of the variables, taking into account the hypotheses raised and the objectives of the research, each question is related to the indicators of the variables; same that was reviewed and assessed by the professors of the doctorate and entrepreneurs, The proposed measurement scale was from zero to ten, being appropriate for the analysis the categories from highly satisfactory to not satisfactory, according to the data collected from the respondents yielded a result of 0. 943 in the reliability coefficient of the instrument measuring all 47 items, which indicates that the internal consistency is very good.

OCAÑA-DE LA CRUZ, Eunice & MOLINA-MOREJON, Víctor Manuel. Evaluation of the performance of financial management in SMEs of the manufacturing industrial sector in Ciudad Nezahualcóyotl, State of Mexico. Journal of Business and SMEs. 2023 For the calculation of the sample, the National Statistical Directory of Economic Units was reviewed, specifically in economic activities of manufacturing, in the food industry, manufacture of clothing, manufacture of metal articles, manufacture of furniture, mattresses and blinds, as well as other manufacturing industries, the size of establishment that was searched was from 6 to 50 employees, in the geographical area of Ciudad Nezahualcoyotl.

The search results yielded 217 economic establishments. Using Cochran's sample calculation (1963:75)

N=N/1+N(e)2

Table 2. Sample size for $\pm5\%,\pm7\%$ and $\pm10\%$ Precision Levels Where Confidence Level is 95% and P=.5.					
Size of	Sample Size (n) for Precision (e) of:				
Population	±5%	±7%	±10%		
100	81	67	51		
125	96	78	56		
150	110	86	61		
175	122	94	64		
200	134	101	67		
225	144	107	70		
250	154	112	72		
275	163	117	74		
300	172	121	76		
325	180	125	77		
350	187	129	78		
375	194	132	80		
400	201	135	81		
425	207	138	82		
450	212	140	82		

Figure 1 Calculation of the sample
Source: (Naing, 2003)

We had the support of the staff of the office in the area of SME Economic Development of the Municipal Government of Ciudad Nezahualcóyotl to survey 111 companies, but the final sample consisted of 96 companies with valid questionnaires and 15 invalidated questionnaires with which the database was formed.

For the statistical analysis of the data, the IBM SPSS STATISTIC software was used to analyse the descriptive data of the sample.

Results

The variables and indicators associated with financial planning that resulted from the analysis of the selected texts, and the coding of significant elements for the development of the theoretical model are as follows. December 2023, Vol.9 No.24 1-9

		Variables of Characterization		INDICATORS
1	Α	Value proposal	A1	Based on technological knowledge
2			A2	Based on market knowledge
3	В	Vision	B1	Focus to result
4			B2	future aspiration
5	С	Mision	C1	Values
6			C2	Purposes
7	D	Management	D1	Information Management Practices
8		Information	D2	Repository of lessons learned
9		financial	D3	Learning-oriented culture
10	Е	Strategy	E1	Generation and development of new business
11		0	50	opportunities
11		Competitive	E2	Customer information
12			E3	Productive chains
13	\square		E4	Innovation in production process
14			E5	Product innovation
15			E6	Costs reduction
16			E7	Productive investment
17			E8	Product differentiation
18			E9	Customer service orientation
19			E10	Electronic commerce
20			E11	Defensive actions customer rewards
21			E12	Loyalty programs
22			E13	Pricing policy
23			E14	Supplies and logistics
24	F	Planning	F1	Relevant financial information
25	1	Financial	F2	Financial analysis
26		1 manetai	F3	Breakeven
27			F4	Forecasts and sales targets
28			F6	Costs and expenses
29			F7	Current investment
30			F8	Fixed investment
31			F9	Cash Flow
32			F10	Financing management
33	G	Valuation and	G1	Solvency
34		Analysis	G2	Working capital
35		Financial	G3	Operating leverage
36			G4	Activity
37			G5	Cost effectiveness
38			G6	Collateral guarantees
39			G7	Financial structure
40	Н	Advantage	H1	Customer satisfaction
41		Competitive	H2	Company longevity
42			H3	Expansion
43	Ι	Results	I1	Increase in sales
44		Financial	I2	Increase in production
45			I3	Lower costs
46			I4	Increased profitability
47			15	Effective decision making

Table 2 Variables associated with financial planning	
Source: Own elaboration	

Diagram of the initial proposed model and the results of the qualitative analysis embodied in the construction of the semantic networks elaborated on the basis of careful reflection and above all reflecting the project guidelines, Atlas TI 7 was used as a tool for storing and analysing information from various reference materials.

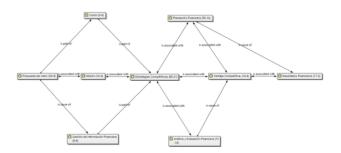


Figure 2 Semantic network of financial planning for the management and development of manufacturing industrial SMEs in Nezahualcóyotl State of Mexico *Source: Own elaboration with Atlas Ti*

Results obtained from the application of the questionnaire to the 96 industrial manufacturing SMEs in Ciudad Nezahualcóyotl that constituted the sample were as follows:

Data collected from the respondents show a result of 0.943 in the reliability coefficient of the instrument measuring all 47 items, which indicates that the internal consistency is very good.

In the total item statistics it is observed that it is not necessary to eliminate any of the coefficients because they do not present abrupt changes in the discrimination index and the scores in general oscillate between .940 and .944, all the items are good.

The calculated results of the measures of central tendency are presented in general for the 47 indicators evaluated, especially the arithmetic mean where results are interpreted both in individual rating values and in their appreciation by range of intervals.

	N	Min	Maxim	Media	Deviation	Variance
		ima	um			
Based on technological know-how	96	0	10	7.99	2.565	6.579
Based on market knowledge	96	4	10	8.9	1.41	1.989
Focus on results	96	0	10	8.65	1.723	2.968
Puture aspiration	96	0	10	8.53	1.783	3.178
Values	96	2	10	8.64	1.516	2.297
Purposes	96	0	10	8.06	2.071	4.291
Information management practices	96	4	10	8.83	1.404	1.972
Lessons learned repository	96	0	10	8.16	2.212	4.891
Learning-oriented culture	96	0	10	8.11	2.117	4.481
Generation and development of new business opportunities	96	0	10	8.23	1.768	3.126
Customer information	96	0	10	8.09	2.108	4.444
Production chains	96	0	10	7.77	2.673	7.147
Innovation in the production process	96	0	10	7.68	2.589	6.705
Product innovation	96	0	10	8.06	2.325	5.407
Cost reduction	96	0	10	8.08	2.279	5.193
Productive investment	96	0	10	7.51	2.902	8.421
Product differentiation	96	0	10	8.13	2.007	4.026
Customer service orientation	96	0	10	8.56	1.621	2.628
E-commerce	96	0	10	8.11	2.504	6.271
Defensive actions Customer rewards	96	0	10	8.28	2.414	5.825
Loyalty programmes	96	0	10	8.48	1.989	3.957
Pricing policy	96	0	10	8.56	1.485	2.207
Procurement and logistics	96	0	10	8.14	1.961	3.845
Relevant financial information	96	0	10	8.51	1.698	2.884
Financial analysis	96	0	10	8.26	2.038	4.153
Break-even point	96	0	10	8.26	1.773	3.142
Sales forecasts and targets	96	0	10	8.34	1.71	2.923
Costs and expenses	96	0	10	8.24	2.004	4.016
Current investment	96	0	10	8.66	1.634	2.67
Fixed investment	96	3	10	8.5	1.654	2.737
Cash flow	96	0	10	8.3	2.042	4.171
Financial management	96	0	10	7.54	3.212	10.314
Solvency	96	0	10	7.72	3.104	9.636
Working capital	96	0	10	8	2.53	6.4
Operating leverage	96	0	10	7.77	2.685	7.21
Activity	96	0	10	8.46	1.818	3.304
Profitability	96	0	10	8.6	2.008	4.031
Collateral guarantees	96	0	10	7.83	2.951	8.709
Financial structure	96	0	10	8.28	2.611	6.815
Customer satisfaction	96	1	10	8.66	1.541	2.375
Longevity of the company	96	6	10	8.91	1.037	1.075
Expansion	96	0	10	8.25	2.157	4.653
Increase in sales	96	4	10	8.53	1.305	1.704
Increase in production	96	0	10	8.39	2.002	4.008
Decrease in costs	96	0	10	8.19	2.399	5.754
Increased profitability	96	0	10	8.22	2.173	4.72
Effective decision making	96	4	10	8.78	1.275	1.625

Table 3 Descriptive statistics 47 elements of the modelSource: Own elaboration with IBM SPSS Statistics.

Descriptive statistics

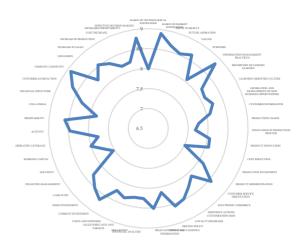


Figure 3 Radial average assessment of 47 indicator *Source: Own elaboration*

In the radial graph the average of the scores obtained in the 47 indicators evaluated is presented, highlighting those that were evaluated with the lowest average rating by the surveyed companies, among the lowest values is the reactive referred to Productive Investment "We expand and renew the investment in our fixed assets frequently" with an average rating of 7.51 points. 51 points; the Productive Process Innovation item "We constantly modernise our productive processes" with a rating of 7.68 points; the Productive Chains indicator "We have managed to successfully insert ourselves into productive chains" with an average rating of 7.77 points.

77 points on average, these items belong to the Competitive Strategy variable; also the Management item "We have Financing financing contracts with various financial institutions" with an average score of 7.54 points, this item belongs to the Financial Planning variable; the Operating Leverage indicator "Our level of fixed costs is higher than those of raw materials and labour" with a score of 7.7 points, this item belongs to the Financial Planning variable; the Operating Leverage indicator "Our level of fixed costs is higher than those of raw materials and labour" with a score of 7.7 points, this item belongs to the Financial valuation and analysis variable: the Technological Knowledge Base indicator with the item "The product or service we offer to the customer provides value in technology" valued at 7.99 points, this item belongs to the Value Proposition variable.

In the case of the indicator Collateral Guarantees "Our fixed assets are recorded as collateral for loans with financial institutions" belonging to the variable Financial Evaluation, it is a statement in the opposite direction, so that the companies surveyed have valued this indicator low with 7.83 rating points, which indicates that the assets owned by the SME are not recorded as collateral or only some of them, so that in this indicator the low valuation would be considered satisfactory.

On the other hand, indicators evaluated with a very satisfactory rating stand out, such as the indicators Longevity of the company with the reactive "We provide our clients with experience, reliability and quality assurance" which obtained 8.91 points, this indicator being the best evaluated on average, belonging to the variable Competitive Advantage; the indicator "Effective decision making" with the reactive "Decision making in the company always leads us to obtain the maximum benefits" with an evaluation of 8.78 points on average, belonging to the variable Competitive Advantage; the indicator "Effective decision making" with the reactive "Decision making in the company always leads us to obtain the maximum benefits" with an evaluation of 8. 78 points on average, belonging to the Financial Results Variable; and the indicator based on Market Knowledge with the reagent "The product or service we offer meets the needs of customers" with a rating of 8.9 points on average, which belongs to the Value Proposition variable and indicator Information the Management Practices with the reagent "We collect and keep complete information in physical or electronic files of the company's operations" with an average evaluation of 8.83 points, which belongs to the Knowledge Management variable.

Conclusions or discussion

The average of the sample data of the 47 indicators that were evaluated by the entrepreneurs indicates that 8 indicators were evaluated with an average rating of 7.51 to 7.99 points, which indicates a perception in the management of these processes with а performance from ranging poor to unsatisfactory on average, representing this group 17% of the total of the indicators evaluated.

24 out of 47 indicators were evaluated with average scores of 8.0 to 8.48 points, indicating a perception of management performance ranging from fair to satisfactory on average, representing 51% of the total number of indicators evaluated.

15 out of 47 indicators were evaluated with average scores of 8.5 to 8.91 points, indicating a perception of management performance ranging from good to very satisfactory, representing 32% of the total number of indicators.

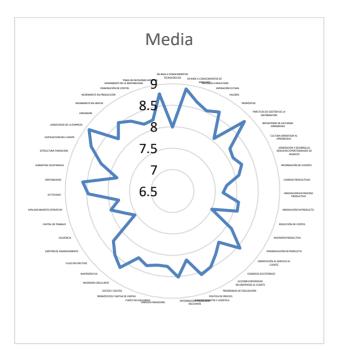
No indicator was evaluated with an average higher than 8.91, thus finding that no company in the sample rated the management of its processes from very good to highly satisfactory on average.

The actions proposed to improve the indicators evaluated as unsatisfactory are training in new technologies that allow the company to offer products with a higher degree of technological knowledge, how to generate meetings and workshops with staff to analyse strategies and operations to ensure success in future operations and consolidate itself as a learning company, investment and innovation projects and product differentiation, to offer differentiated attributes with respect to the competition.

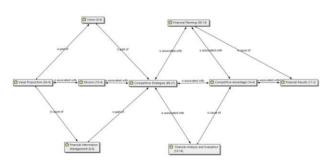
Training in calculating cash requirements, use of cash flow.

Solvency, sources of financing, disbursement management, temporary investments.

Annexes



Annex 1. Average radial graph of ratings of the 47 indicators associated with financial planning.



Annex 2. Semantic network of financial planning for the management and development of manufacturing industrial SMEs in Nezahualcoyotl, State of Mexico.

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