THE CONTRIBUTIONS OF FIRM'S PRODUCTIVE ASSETS TO ITS COMPETITIVE PERFORMANCE: A RESOURCE-BASED VIEW APPROACH IN THE SOFTWARE SECTOR

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RESUMO

De acordo com a abordagem do RBV (*Resource Based View*), a principal causa da variedade de desempenho das firmas no mercado reside na natureza específica dos seus recursos e competências acumuladas. Todavia, a natureza tácita e, ao mesmo tempo, o caráter qualitativo das variáveis explicativas dificulta a parametrização e a quantificação do grau de correlação entre o desempenho competitivo e os recursos da empresa. Através de pesquisa realizada em 1999, o economista francês Rodolphe Durand desenvolveu uma metodologia própria construindo variáveis latentes (*proxys*) que permitem avaliar de forma bastante satisfatória a relação entre desempenho e recursos específicos da firma. Com base nesta metodologia avaliamos, no caso específico do setor de software brasileiro, qual é o grau de influência dos ativos produtivos das empresas no seu desempenho competitivo. A teoria prevê que quanto maior a inimitabilidade e imobilidade dos ativos, maiores serão sua lucratividade, margem e desempenho de mercado. Na inimitabilidade encontramos associação positiva relevante apenas com o desempenho de mercado. Em relação à imobilidade encontramos uma associação positiva com a lucratividade e uma associação negativa com a margem.

Palavras-chave – *Resource-Based View*, recursos específicos à firma, desempenho competitivo; setor de software.

ABSTRACT

In accordance to Resource Based View (RBV), the main cause of the variety of firm's performance in the market lies on the specific nature of their resources and accumulated competences. Nevertheless, the majority of explicative variables are qualitative what makes it hard to quantify and identify the correlation degree between the competitive performance and the resources of the company. Through a research performed in 1999, the French economist Rodolphe Durand developed his own methodology, building latent variables (proxys) that permit a highly satisfactory evaluation of the relationship between firm's performance and their specific resources. Based on this methodology we evaluated, in the specific case of Brazilian software sector, the degree of influence of the firm's productive assets on its competitive performance The theory establishes that the higher the inimitability and immobility of assets, the higher their profitability, margin and market performance. In inimitability we have found a relevant positive association only with the market performance. In relation to immobility we found a positive association with profitability and a negative association with margin.

Key words – *Resource-Based View*, firm's productive assets, competitive performance, software sector.

Classificação JEL: D23

The contributions of firm's productive assets to its competitive performance: a Resource-Based View approach in the software sector

1. Introduction

The profit margin and market share are indicators of competitive performance that present significant variations among companies in the market. Especially in the Brazilian software sector, these differences are even greater. This sector involves both large and internationalized companies and small companies geared towards serving the domestic market, with a greatly reduced portfolio of clients.

In accordance to RBV (*Resource Based View*) approach, the main cause of the variety of firm's performance in the market lies in the specific nature of their resources, since this specificity makes them inimitable, untransferrable and unsubstitutable, consequently guaranteeing the obtainment of differentiated profits.

Based on this theoretical outlook, the general objective of this study is to assess the impact of companies' assets and resources, considered sources of sustainable competitive advantage, on the profitability, margin and market performance of companies from the software sector in Brazil. More specifically, we seek to reproduce the methodological proposal of parameterization of the variables that condition the competitive performance by French economist Rodolphe Durand (1999). Through a survey conducted with a total of two thousand (2,000) companies from 50 industries in France, this author proves that there is a strong influence of firm's specific resources (human resources, technological resources, etc) on its competitive performance[1].

The methodology proposed by Durand will be used as a basis, in the specific case of the software sector, for an evaluation of the degree of influence of firm's resources in their competitive performance, although limited to the investigation of the relationship between the properties of the firm's productive assets in the sector and their profitability, margin and market performance.

2. Resource Based View

The Resource Based View, commonly designated RBV, does not constitute a theory, strictly speaking. In reality it is a view that combines a set of reflections regarding the factors that condition the competitive performance, based on conditions from inside the company, related to its own characteristics and competencies acquired and constructed over time. The idea is that the competitive performance is much more closely related to the resources that the company owns and manages than the characteristics of the industry or of the sector to which it is related (Wernerfelt, 1984; Barney, 1991; Amit & Schoemaker, 1993).

The conceptual base is a specific view of a firm and how it is organized. Considered one of the precursors of RBV, according to Penrose (1959) the firm should be seen as a set of resources (productive, financial, organizational and human), whose arrangement among multiple uses over time is determined by an administrative decision. As such, the firm should be considered unique as the resources are used and combined exclusively.

Productive resources correspond to the nature of the technological assets and aptitudes of the company and are considered the main sources of differentiation with respect to the appropriation of income. These resources include both tangible assets (physical equipment, geographic location, access to raw materials, etc) and intangible assets (knowledge, experience, decision-making skill, relationships, etc).

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[1] There are few studies that seek to test RBV in Brazil. The articles of Basso et alii (2004a, 2004b) served as inspiration for this research.

The singularity of each individual company lies in the distinction between resources and the possible services that can be obtained in accordance with the use (employment) of each resource. These, per se, are not essential factors in the production process, but in the services generated therefrom, that is, the way in which they are used. The same resource used or combined with other resources in different ways yields services that are also different (Penrose, 1959).

As they are specifically related to the company, resources are strategic, define and sustain a competitive position. According to Amit and Schoemaker (1993), strategic assets have the following fundamental properties: scarcity, immobility, inimitability, non-appropriability and speciality. In other words they are scarce, hard to sell, imitate and appropriate, and are specialized in order to provide the company with a sustainable competitive advantage, guaranteeing the production of differentiated income.

Firms are not only singular but they also seek this singularity. It is the quest for asymmetry as a competitive strategy, through specific arrangements of resources, which guarantees asymmetric competitive positions. The pace and direction of a firm's growth depends on the extent to which it is willing to act in the favorable investment opportunities that arise (Penrose, 1959). As pointed by Peteraf (1993), the sustainable competitive advantage requires the long-time preservation of singularity or heterogeneity. This means that the nature of the assets should be analyzed not only through the obtainment factors (*ex-ante*) but also the factors of maintenance of the firm's competitive position over time (*ex-post*).

Assets that are imperfectly immobile and inimitable are sources of sustainable competitive advantage, as they are related to the company and available for its exclusive use over time. In this sense, innovation is an essential factor in the sustention of a competitive advantage (Nelson & Winter, 1982; Levin et alii, 1985; Teece, 1988; Von Hippel, 1988; Sanchez, 1995; Teece, Pisano & Schuen, 1997). The product of an innovation is the creation of new assets combinations, of high value, specifically related to the company (McGrath et al., 1996). By implementing innovations, companies establish a flow of resources that leads to the creation of stocks of specific assets that other companies will be unable to rapidly replicate (Dierickx and Cool, 1989).

In accordance to Dosi & Teece (1993), firms are configured in organizations that have specific competences to coordinate activities and learn about others, in a context of constant changes in the economic environment where they operate. To this effect, the limits of the firm are defined in accordance with the nature of their coordination and learning competence. The quest for competitiveness is based on the obtainment of competencies in different focal points of action of the company: allocative competence (related to the production and price formation decisions); transactional competence (competence in the sphere of purchase and sale relations); administrative competence (determination of the policies and of the organizational structure); technical competence (related to the skill of developing and designing new products and processes) and competencies related to the skill of changing existing competencies, through the innovative activity and learning. On these different aspects where competencies are defined, the emphasis is placed on the coordinating and organizational action of the firm and this action involves the adoption of routines at the operational level that reflect the cumulative and inertial nature of competencies as well as the tacit nature of knowledge on which these are based.

The coordination of resources is the key ingredient in the construction of competencies and in the definition of the firm's performance. A high level of internal coordination provides the company with enhanced performance indirectly, because it creates the necessary environment for non-imitability, non-transferability and non-substitutability of its resources, boosting the potential of its competitive advantages (Durand, 1999). The types, quantities and qualities of resources available to the company represent an important condition of its competitive potential, since they restrict the extension and pattern of organizational routines that can be carried out. However, the way of being, values, transitions and culture of the company can be seen as intangible resources that are common ingredients to a large quantity of organizational routines (Grant, 1991).

External relationships, which consist of the ties between the company in question and its suppliers and clients, are also considered a source of appraisal of the level of performance of the company (Levinthal & Myatt, 1994; Powell & Dent-Micallef, 1997; Poppo & Zenger, 1998). Several types of costs, as well as benefits, are associated with the management of these relationships. The nature of these relationships causes an impact on the level of costs incurred and on the quantity of benefits generated, thus on the performance of the company (Larson, 1992).

The study of the firm's productive resources and the relationships with suppliers and customers consists of an initial test to empirically support or reject the resource based theory (Demsetz, 1995). However, according to Durand (*in*: Hitt *et alii*, 2001), few studies so far have attempted to differentiate the various resources of companies as being sources of competitive advantages through the appraisal of their costs and performance. The tacit nature, and at the same time, the qualitative character of the explicative variables (inimitability, non-transferability and non-substitutibility) hinders the parameterization and quantification of the degree of correlation between the competitive performance and the resources of the company.

Through research performed with over two thousand (2,000) companies, in a total of 50 industries, Durand (1999) proposes a parameterization based on latent variables (*proxys*) that permit a highly satisfactory evaluation of the relationship between the performance and specific resources of the firm. The proposed methodology is based on the fundamental theory that the relationship between the resources of the company and its market performance is based on three aspects, which are the explicative variables of the model:

1) Non imitability (or inimitability)

2) Non-transferability (or immobility)

3) Non substitutability (or insubstitutability)

These three aspects (inimitability, immobility and insubstitutability) are evaluated both from the point of view of productive resources and of the company's interrelations with its suppliers and end clients.

The inimitability of resources is measured by the degree of differentiation of products and of the necessary costs to rapidly accumulate the strategic resources required to reduce the inimitability of the firm. The more flexible the technological base of a company and the more costly the competence accumulation process, the less imitable its productive assets will be.

Immobility is measured by the R&D (research and development) activities performed by the company. The greater the importance of these activities attributed by the company and the higher the level of effective expenditures made in the accumulation of knowledge, the more tacit and more difficult the transfer of knowledge by competitors becomes.

The non-substitutability of relations with suppliers and clients is evaluated based on the cost of substitution and of the purchase policy (in the case of suppliers) and of investments (in the case of clients) adopted by the company, where they seek to evaluate the link and the degree of commitment of the company with its suppliers and clients.

The greater the inimitability, immobility and insubstitutability of firm's resources, the higher (or better) the performance of the company. The performance or the competitive performance of the company (dependent variable) is measured through three proxys: profitability of assets (financial and operational), margin on sales and market performance (growth of sales or of market share). In other words, the performance of the company is measured both in terms of financial profitability and of market performance. In this case a good market performance is not always associated with a high profitability.

Exclusivity and the guarantee of ownership of resources is what guarantee the maintenance of the competitive performance of the firm over time. From the point of view of the company-supplier relationship, the less substitutable the relation, the better the performance in terms of market, but the lower the

profitability, due to the absence of competition among suppliers. In the company-client relation, the less substitutable this relation, the worse the market performance. The emphasis on a market niche makes the radius of action of the company restricted, because its consumer market presents peculiar characteristics not always applicable to other segments. On the other hand, the less substitutable, the greater the profit margins, keeping in mind the loyalty of consumers (absence of competition in sale).

In spite of the importance of the company's relations with suppliers and clients in its performance the objective of this study, due to the reduced size of the selected sample group, was limited to reproducing the research performed by the French researcher only in the investigation of the relation between the properties of the productive assets of companies and their profitability, margin and market performance. To this effect, the latent variable non-substitutibility was discarded from the analysis[2].

The general specification of Durand's model and its adaptations to the objective proposed in this study are presented in the following item.

3. Methodology

If the portfolio of resources of a company is of decisive importance in its performance indicators, the following question is posed:

1) What is the relationship between these resources and the firm's competitive performance?

2) How can the impact of these resources on the firm's performance be measured?

From the point of view of relations among variables, the following hypotheses were proposed:

➢ **H1**: The higher the inimitability of firm's productive assets, the higher its profitability, margin and market performance.

➢ **H2**: The higher the immobility of the productive assets of the company, the higher its profitability, margin and market performance.

In addition to the main theories, we also tested two secondary hypotheses that study the relationship between them of the financial and market performance variables:

➢ **H3**: The higher a firm's market performance, the higher the firm's margin and profitability.

➢ **H4**: The higher a firm's margin, the higher a firm's probitability.

The proof of these hypotheses through the measuring of the impact of productive assets on firm's competitive performance was based on the indicators of latent variables (proxys) proposed by Durand (1999). The measurement of most of these indicators is based on a five-point Likert scale, since the majority are parameters of a qualitative nature.

The general specification of the model is presented in Chart 1 below. The following are considered dependent latent variables (or endogenous, of result): the profitability of assets, the margin on sales and market performance. The corresponding profitability indicator is ROA (*Return on assets*) and the margin indicator is ROS (*Return on Sales*). The market performance indicators are KEYPOS (firm's competitive position in relation to the success factors of the industry) and BCG (relation between firm's market share and that of its main competitors).

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[2] The handling of the company's relations with suppliers and clients was performed separately in another paper by the authors. See Meirelles et alii (2005).

There are two independent or exogenous latent variables (explicative): inimitability and immobility of the productive resources. The corresponding inimitability indicators are DESTIME (cost for accumulation of strategic resources) and DIFF (product differentiation potential). Immobility is measured by three indicators: FUNRDAL (relevance of research and development activities in relation to the other areas of companies), RDREL (expenditures of the company with R&D in relation to the average of the industry) and DEGTRANS (proportion of stock of more mobile resources, related to the sale, and less mobile resources, related to production).

Chart 1. Specification of the Model

Variables	Indicators or Variables Observed	Concept
Dependent Latent Variables		
Profitability	ROA	Return on Assets
Margin	ROS	Return on Sales
Market performance	KEYPOS	Relative position of the company in a ranking of success factors of the industry to which it belongs (KSF – key success factors);
	BCG	Relation of the company's market-share and that of its main competitors in the market
Independent Latent Variables		
Inimitability	DESTIME	TCD (*time compression diseconomies*), i.e., costs required to rapidly accumulate the strategic resources required to reduce the inimitability of the company.
	DIFF	Product Differentiation Degree.
Immobility	FUNRDAL	Relevance of the R&D area in relation to the other areas of the company (marketing, financial, purchases, etc).
	RDREL	Expenditures of the company with R&D in relation to the average of the industry.
	DEGTRANS	Difference between the stock of resources related to the sale (images, supplementary services etc), allegedly more transferable, and the stock of resources related to production (cost, quality and technical performance), allegedly less transferable.

Source: Durand (1999)

The measurement of the indicators corresponding to the dependent latent variables occurred as follows:

- ROS (return on sales): Operating Profit on Gross Revenue from Sales (average of last three years);

- ROA (return on assets): Net Revenue from Sales on Total Assets (average of the last three years).

- KEYPOS: a list of the interviewees with the main success factors in the industry (KSF – *key success factors*) is furnished beforehand. Using this list the interviewee evaluates its company in relation to competitors, based on a five-point Likert scale. KEYPOS is then calculated as the average of the self-evaluation of the company in relation to each one of these factors, weighed by the respective importance of these factors present in the industry.

- BCG: ratio between the *market share* of the company and that of its main competitor.

The measurement of indicators in the group of independent latent variables were as follows:

- DESTIME: a list for the interviewees with the factors that bore the greatest influence on the costs of the company in the last two years (size of production units, level of production,

specificity of technology, productivity of labor, etc.) is furnished beforehand. Using this list the interviewee evaluates, on a five-point Likert scale, the degree of difficulty that new competitors would find in attaining each one of the aforementioned factors. Finally, DESTIME is calculated through a weighted average of the value of competitive advantage corresponding to the selected strategic dimensions.

- DIFF: with a basis on the five-point Likert scale, the interviewee evaluates the degree of differentiation of production permitted by the technological base of the company.

Also in the group of independent latent variables, the indicators related to immobility (or non-transferability), FUNRDAL, RDREL and DEGTRANS were measured as follows:

- FUNRDAL: ratio between the importance attributed by the interviewee to the R&D department and other areas of the company (marketing, financial and purchases).

- RDREL: ratio between the company's average expenditures on R&D in the last three years and the average expenditures on R&D by the sample group as a whole.

- DEGTRANS: through the success factors of the industry identified in the KEYPOS calculation they separate those of greater mobility, normally connected to the sale (images, supplementary services, etc), of those of lesser mobility, normally related to the production (cost, quality and technical performance). Then they calculate separately, for mobile and less mobile factors, the average self-evaluation of the company in relation to each one of the factors, weighted by the respective importance that these factors present in the industry. Then they calculate the difference between these two averages, that is, the average referring to the factors of greater mobility, allegedly more transferable, less the average referring to the factors of lesser mobility, supposedly less transferable.

The statistical model used in the research performed by Durand in the evaluation of the correlation among variables was the Model of Structural Equations, a technique that permits the validation of the theoretical constructs through the test of relationships among various latent variables under investigation.

The formalization of a model of structural equations requires as an initial and essential procedure the construction of a diagram of path that describes the relations between the variables representing the set of theoretical propositions that they want to prove. In this diagram the latent and observed variables are connected through one-way arrows and two-way arrows. The one-way arrows signal that the variable at the end of the arrow is explained in the model by the variable at the beginning of the arrow. The two-way arrows represent covariance between two variables, signaling that there is a bi-directional relation among the connected variables (Raykov and Marcoulides, 2000).

Hence in the path diagram, the independent variables always emanate arrows and the dependent variables always receive at least one one-way arrow. It is important to emphasize that the independent variables can be related with each other, that is, connected with two-way arrows, but the dependent variables never connect with each other because they are explained and not explicative variables, i.e., the variances and covariances are explained in the model in terms of unknown parameters.

In the case of Durand's model, the proposed path diagram is as follows:

Figure 1. Path diagram –Durand model (1999)
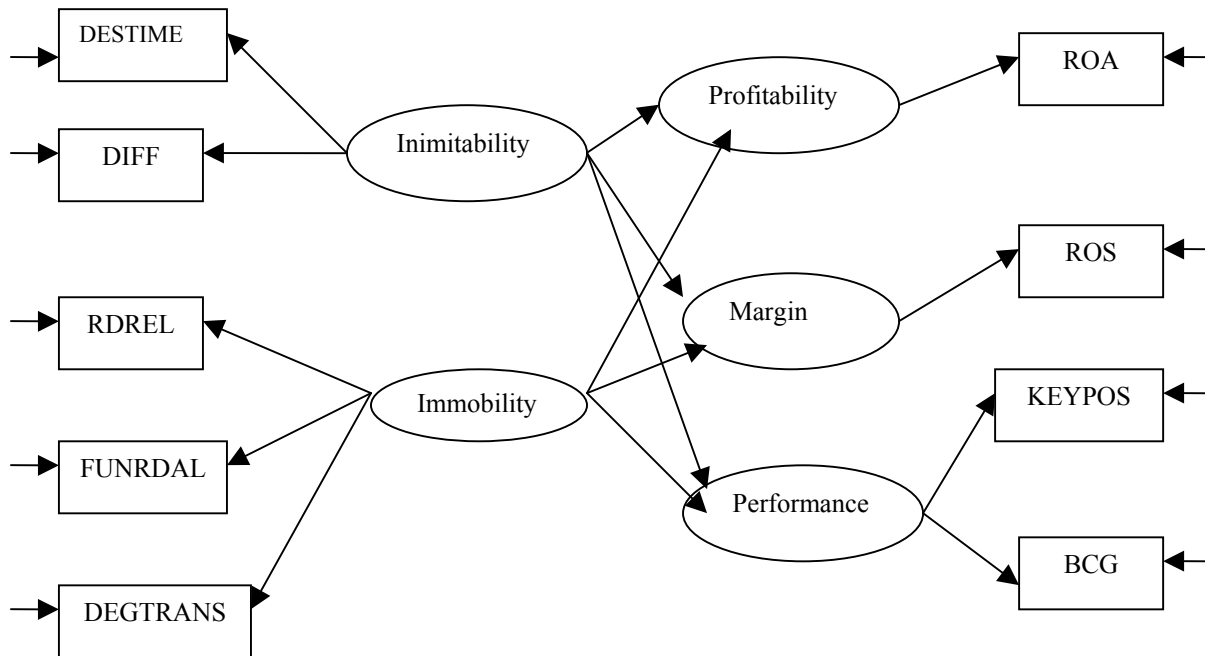
Source: Durand (1999)

The structural equation model technique was also used in this study conducted on the software sector. The treatment of the data and econometric evaluation was performed through Amos software (Joreskog, *Users Guide*), used in the construction of structural models. The results that were obtained are presented below.

4. Results

The base sample of the research included a total of 100 companies from the software sector located in the city of São Paulo. Of the total interviewed companies, 62% produce products (management software, automation, customizable software in general, etc) and 38% render service (maintenance, management, deployment and integration of systems, etc). They are mostly micro and small companies: 33% of the sample has from 1 to 9 employees and 42% has 10 to 49 employees. They are also companies geared predominantly towards the domestic market (only 15% of the sample group exports) and supplied with predominantly national inputs (only 27% use raw material in the productive process).

The descriptive analysis of the quantitative variables of the model (mean, median, standard deviation, minimum and maximum) is presented in table 1 below. As observed in the table, the company's expenditures with R&D present median 0, since most of the responses were null in relation to this question. On the other hand, the expenses relating to innovative activities, which include not only R&D activities but also the purchase of equipment, technology and services in general for the implementation and development of new products and processes, presented the greatest quantity of answers. In this case, they opted to work only with

innovative activities in the calculation of the RDREL indicator (parameter used in the evaluation of the immobility of the company's resources). For this reason, the designation of this indicator in our model is henceforth RDRELINO.

Table 1. Descriptive Analysis of Variables

	Mean	*Median*	*Standard Deviation*	*Minimum*	*Maximum*
Return on Assets	73.9	38.3	142.6	1.6	833.3
Return on Sales	24.3	20.0	19.7	0.0	80.0
Competitiveness of the Company in relation to its competitors	4.2	4.3	0.5	2.9	5.1
Market performance	1.20	0.76	1.77	0.07	14.00
Costs for Accum. Strategic Resources	3.09	3.08	0.60	2.00	4.55
Degree of Differentiation of Products	4.05	4.00	0.81	1.00	5.00
Relevance of R&D in relation to the other areas	0.72	0.67	0.77	-2.33	3.00
Expenditures of the company with Innovative Activities in relation to the average of the industry	0.58	0.14	0.83	-0.14	3.84
Expenses of the company with R &D in relation to the average of the industry	0.61	0.00	1.19	0.00	6.33
Proportion of stock of resources related to the sale (more mobile) and resources close to production (less mobile)	-0.02	0.00	0.46	-1.22	1.16

The estimation method used in the study was that of weighted least squares. The correlation matrix presented in table 2 below was used for the estimation of the model.

Table 2. Correlation Matrix of Indicators

Indicators	ROA	ROS	KEYPOS	BCG	DESTIME	DIFF	FUNRDAL	RDRELINO	DEGTRANS
ROA	1								
ROS	0.06	1							
KEYPOS	-0.09	0.04	1						
BCG	-0.05	0.05	0.27	1					
DESTIME	0.06	0.23	0.16	0.06	1				
DIFF	-0.13	-0.08	0.33	0.28	0.29	1			
FUNRDAL	0.09	0.16	-0.02	0.10	0.30	0.23	1		
RDRELINO	-0.12	0.36	0.23	0.16	0.27	0.07	0.27	1	
DEGTRANS	-0.13	-0.18	0.05	-0.03	-0.02	0.00	-0.09	-0.16	1

Table 3 below indicates the results of the Chi-Square test, which is one of the main forms of verifying whether the model is well adjusted, and other adjustment measures with their respective reference values. As observed, the encountered values indicate a good adjustment of the model.

Table 3. Quality of the adjustment of the model

Measure	Value Found in the model	Reference value that indicates a good adjustment of the model
Chi-Square Test	0.013	<0.05
GFI	0.91	>0.90
AGFI	0.87	>0.90
RMSEA	0.082	From 0.05 to 0.08

The Critical Ratio criterion was used to verify which variables presented any implication with others, considering statistical significance when Critical Ratio > 1.96. In the diagram below we can observe that not all the variables are significant for their respective constructs (0 indicates the variables with preestablished interrelations).

Other models were tested, such as by establishing BCG instead of KEYPOS, but these others did not present a good adjustment, or the model did not converge.

Figure 2. Path diagram for the proposed model with the Critical Reasons *
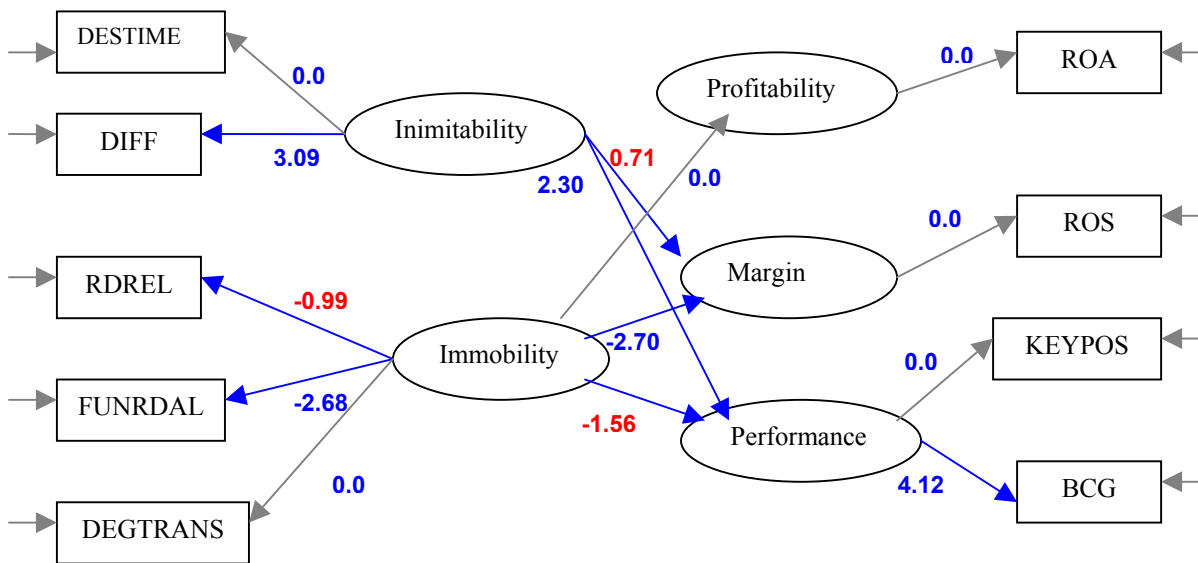
* Description of the forms used in the study:

- Rectangle – Observable variables
- Ellipse – Latent variables
- Grey line – indicates the influence in another variable or construct, but with a reference value.
- Line – indicates the influence in another variable or construct.

In the model of structural equations, for each latent variable there is always an observable parameter that pre-fixedly is related to this latent. As a restriction imposed for the model to be identifiable, the parameters associated with each latent variable should assume a fixed value, generally 1 for models using the correlation matrix, indicating that the units of measure of the non observable variables are the same as the parameter in question.

We present below the results verified in the diagram with the estimates and critical reasons in the form of tables and also the estimates (non standardized) of the parameters. They were separated in two tables: estimates of the impacts for the observable variables and estimates of the impacts of the non-observable variables (latent). There were three significant parameters (high critical ratio): BCG, DIFF and RDREL.

Table 4. Estimates of the parameters of the observable variables

Latent variable	Parameter	Estimate	Standard Error	Critical Ratio
Profitability	ROA	1		
Margin	ROS	1		
Performance	KEYPOS	1		
	BCG	0.85	0.21	**4.12**
Inimitability	DESTIME	1		
	DIFF	1.16	0.38	**3.09**
Immobility	RDRELINO	-1.70	0.63	**-2.68**
	FUNRDAL	-0.43	0.43	-0.99
	DEGTRANS	1		

Table 5. Estimates relating to the constructs

Implication in the latent variable	Parameter	Estimate	Standard Error	Critical Ratio
Profitability	Inimitability	0	0.10	0.0
	Immobility	1		
Margin	Inimitability	0.12	0.16	0.71
	Immobility	-0.93	0.34	**-2.70**
Performance	Inimitability	0.58	0.25	**2.30**
	Immobility	-0.47	0.00	-1.56

As mentioned before the interpretations of the model will be done through the standardized result. The standardized results for the observable variables are presented in table 6 below. To interpret the impacts, it is worth remembering that the scales vary from −1 to 1, since besides being standardized values, we are analyzing through the matrix of correlation. With a basis on the standardized estimates, we can affirm that:

- The ROA indicator has total implication in the PROFITABILITY;

- ROS shows a positive association of 0.64 with the MARGIN;

- Indicators KEYPOS and BCG has significant implications in PERFORMANCE, with associations with the factor in 0.60 (KEYPOS) and 0.54 (BCG).

- The indicators DESTIME and DIFF have significant implications in INIMITABILITY, and are associated with the factor to the value of 0.52 (DESTIME) and 0.58 (DIFF);

- The parameter RDRELINO shows a low negative association (-0.19) with IMMOBILITY. On the other hand, the indicator DEGTRANS shows a positive association of 0.42.

Table 6. Estimates of the parameters of observable variables

Latent variable	Parameter	Standardized Estimate
Profitability	ROA	**1.0**
Margin	ROS	**0.64**
Performance	KEYPOS	**0.60**
	BCG	**0.54**
Inimitability	DESTIME	**0.52**
	DIFF	**0.58**
Immobility	RDRELINO	**-0.19**
	FUNRDAL	-0.61
	DEGTRANS	**0.42**

Table 7 below contains the results obtained for the unobservable variables, that is, for the constructs of the model. In this case the same considerations applied to the parameters of these constructs are valid:

- There is a positive association of IMMOBILITY with PROFITABILITY to the value of 0,42; but there is a negative association with MARGIN to the value of 0,51.

- There is a positive association of INIMITABILITY with PERFORMANCE to the value of 0.42, while IMMOBILITY displays a low negative association (-0.29).

Table 7. Estimates of parameters of non-observable variables

Implication in the Latent Variable	Parameter	Standardized Estimate
Profitability	Inimitability	0.0
	Immobility	**0.42**
Margin	Inimitability	0.09
	Immobility	**-0.51**
Performance	Inimitability	**0.47**
	Immobility	**-0.29**

5. Conclusion

This analysis of a model of structural equations is based on a preconceived model regarding the explicative variables (non-observable) and the corresponding parameters. To this effect the statistical analysis consists of validating or rejecting this pre-specification, evaluating the observable relations from the data of the selected sample.

As regards the parameters selected for the dependent latent variables, we conclude that:

1) The parameters ROA and ROS are an excellent approximation to the profitability of assets and the margin on sales of companies from the software sector.

2) The parameters KEYPOS and BCG have significant associations with the market performance of companies from the software sector. However, the parameter KEYPOS, which reflects the competitive position of the company in terms of domain of success factors in the industry, is more significantly related with the market performance than with the relative market share (BCG).

As regards the relations of the chosen parameters and the independent latent variables, as proposed by Durand (1999), it is possible to affirm that:

1) The parameters DESTIME and DIFF have significant implications in the inimitability. However, DIFF, referring to technological flexibility, bears a greater impact on inimitability. This result could indicate that, in the software sector, the maintenance of technological flexibility is more important than the costs required for the accumulation of strategic resources.

2) The parameter RDRELINO shows a low negative association with the latent variable immobility, on the other hand, the parameter DEGTRANS displays a positive association. This result indicates that for Brazilian software companies, investments in innovative activities are not relevant in the guarantee of non-transfer of accumulated knowledge.

In the evaluation of the relations between the independent latent variables and dependent latent variables, it can be concluded that:

1) Inimitability presents a low association with profitability and margin, but it is influent in market performance. This result could be indicating that the construction of competencies that generate inimitability, through, above all, investments in product differentiation, can bear, at least on the short term, little influence on profitability. However, a good market performance can guarantee the profitability of assets and the sales of the company on the long term.

2) Immobility, to the contrary, has scarcely any influence on the market performance and presents a positive association with profitability. In other words, the guarantee of non-transferability of strategic resources to competitors is not capable of ensuring greater market share. To this it can be added the impossibility of increasing margins, expressed in the significant negative association of immobility with margin.

In view of the results obtained, we can therefore affirm that the resource-based view approach, as presented by the methodological proposal of Durand, proves a good instrument of analysis and understanding of the competitive performance of companies from the Brazilian software sector. Above all, this approach enables us to affirm that the firm's competitiveness in the sector is directly related to the differentiation of products, that is related to the specificity of the technological base.

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