

# Management team view and the value management process: association analysis of Brazilian public companies

## Abstract

This study investigates the relationship between the goodwill value enjoyed by Brazilian public companies and their ideas and opinions about value management. Two kinds of research are presented. The first is based on a questionnaire, whereas the other analyzes the quarterly MVA<sup>®1</sup> between 1995 and 1998. MVA<sup>®</sup> (Market Value Added)—that is, market value less capital invested—is chosen as the proxy measure for goodwill, and is computed according to Stewart's procedures, using market values (for prices) and book values (for capital invested). The main issues explored in this research are what companies *think* about value, how they *apply the concept*, and which *tools they prefer* in management accounting. The main findings show that three variables are significant for the companies that have improved their MVA<sup>®</sup> performance during the period under review.

**Key words:** market value added, MVA<sup>®</sup>, management performance

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## 1. Introduction

Accounting provides different services to different clients. Some of these clients are more demanding in relation to how the information should be developed and which rules should be followed, whereas others are less demanding. Financial accounting is a branch of accounting that provides relevant information to external clients. Management accounting does the same for internal clients. Some researchers believe that, eventually, the financial and management branches of accounting will become one. In some markets, this seems to be possible.

One important incentive for accounting to improve itself is provided by a strong stock market. Initially, its effect is mainly felt in the field of financial accounting. At a later stage, management accounting also feels its influence. In practice, accounting is challenged to deal with distortions resulting from its efforts to avoid asymmetric information. This is an important issue for public companies. The more visible a company becomes through the figures it provides to its clients, the greater the amount of work that is required to provide these figures. At the end of the day, information is important for making proper decisions. But this costs money, which means that it impacts on the wealth of stockholders. Consequently, some stockholders can argue that the cost of the information does not match its benefits, and might refuse to invest sufficient money in it.

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<sup>1</sup>MVA<sup>®</sup>, Market Value Added, is a Stern Stewart trademark.

From the perspective of planning, an organization needs to adopt a long-term financial metric. The entity needs at least one reliable financial indicator that will direct management towards the proper decision. No matter which tool is chosen, management accounting lies behind it. Value management is conceptualized as a kind of activity that must be developed to provide day-by-day answers. The business plan is aimed at improving and increasing company value. Although the business plan does not function from a short-term perspective, short-term goals must be consistently achieved to reach the aim of the business plan.

Common sense tells us that good practice provides good results. This belief is critical for the development of accounting. Many entrepreneurs have doubts about it due to their own experiences or due to the stage their companies have reached in specific sectors. More specifically, in the past, Brazil went through a period of high inflation and high government interference in the economy, including accounting rules. As a result, the level of development in some areas of accounting was higher than in others. The treatment of accounting figures under inflationary conditions was considered critical and professors of the *Universidade de São Paulo* developed significant academic and practical work in this field. In particular, Professors Sérgio de Iudicibus, Eliseu Martins, and Armando Catelli made significant improvements in the price-level treatment of accounting information. Management accounting was also developed in many companies but, as a result of the conditions described above, some investors do not consider it to be as useful as it actually is. The major objectives of this paper are to investigate: (i) what companies think about value; (ii) what they do with the concept of value; (iii) which is their long-term financial indicator; and (iv) whether this correlates with results perceived in the market.

To calculate goodwill, it is necessary to compute the market value of a business and deduct the capital invested in the business. This cannot be achieved without a strong and consistent management accounting system. Common sense dictates that the better the information system, the greater the chance of the entity improving its results. In other words, when investing in management accounting, the organization expects a significant favorable trade-off for investing in this resource (rather than another) in attempting to raise value. Consequently, the research question of the present work can be defined as: 'Does there exist a relationship between what Brazilian companies know, think and use value management concepts and MVA<sup>®</sup> performance?'.<sup>®</sup>

The period from 1995 to 1998 was chosen due to the relative stability of the stock market at this time, and the absence of any heterodox economic plans. It was also a period in which the stock market showed good results. In this context, the main goal of this research is to identify what the companies *think*, *know*, and *use* in relation to value management. The

field survey can be justified on the basis that, although the stock market is very important, very little published research in this area has focused on value based management.

This paper does not attempt to establish whether the use of MVA<sup>®</sup> by the companies is beneficial in itself. Actually, the analysis is conducted from the external perspective and even the MVA<sup>®</sup> figures were computed by the author and not by the management team of each entity. In other words, there is no intention to obtain evidence that an organization is better off using MVA<sup>®</sup>. Rather, according to the MVA<sup>®</sup> perspective of performance, the author sought support for the conceptual framework envisaged, and tried to identify a link with what the management team thinks, knows, and uses in this respect.

## **2. Theory development**

### **2.1 Stockholder's value**

According to Rappaport (1997:1): “... value will more than likely become the global standard for measuring business performance”. The takeover movement in the latter half of the 1980s provided a powerful incentive for stockholders and managers to focus on the creation of value. On a global basis, Faseruk and Coady (1997:60) considered that: “the valuation process in developed countries has become a strategic exercise refined to the point where companies are now examining all aspects of their operations in order to identify opportunities for value creation, particularly through value-based management decision techniques”. The investor does not pay more for an asset than it is worth (Damodaran, 1996:1) but, in a practical sense, the *how to* question must be solved. Although this issue is considered important, it is not explored any further in this particular study.

### **2.2 Long-term financial tool**

A financial indicator is used on a long-term basis for strategic and tactical plans, and can be defined, prepared, and implemented to improve company value. The question of which indicator is best lies outside the scope of this article. Nevertheless, it is clear that a proper accounting information system is an important part of the entire system that enables an organization to improve its value performance. In a coordinated effort, professionals, concepts, systems, and procedures can optimize the economic results, and this will be reflected in the market, assuming that there exists a satisfactory communication process. In this way, the expression ‘value management’, as used in this paper, should be interpreted as active management accounting in support of business decisions. In this sense, if the management team uses MVA<sup>®</sup> figures to guide decisions, management performance and investment decisions are linked to a mixed indicator that captures not only internal economic factors (such as investment performance), but also external perception (which is related to the stockholders’ reaction to future perspectives). Allowing for management performance and

investor perspective, MVA<sup>®</sup> is an adequate tool to control the trade-offs and reduce the agency problems.

### 2.3 MVA<sup>®</sup> components

The MVA<sup>®</sup> (Market Value Added) is the goodwill which the market attributes to the entity, and serves as a periodical metric. In a very simplified way, Market Value Added *equals* market value *less* capital invested. It is the proxy adopted to compute the deducted capital that was invested in the operational business, considering the market value of the entity. At any given time, when analyzing the market, we can see companies that do not need a significant amount of capital to have an impressive market value—which produces a significantly positive MVA<sup>®</sup>. From the investors' perspective, this means that favorable future results are expected. The opposite, that is, a negative MVA<sup>®</sup>, indicates that the market does not have a favorable view of the entity's future, or that future benefits are expected to be lower than the capital invested. The MVA<sup>®</sup> can be calculated by considering a company's future cash flow or residual income discounted at a proper future rate—that is, the present value of future benefits. It is expected that the higher the residual income or cash flow, the higher will be the market value. Some authors try to deconstruct MVA<sup>®</sup> for the purpose of a qualitative analysis (Frezatti 1999). This provides a link between the external market value of a company and its internal management accounting aspects (capturing relevant figures)—which is significant for investor performance analysis. The resources required for the company to provide results is exactly what 'capital invested' means. We can compute it using the following operational book values:

- + short-term operating assets
- short-term operating liabilities
- + net property plant and equipment
- liabilities (without long-term interest charges)
- + other operational assets
- = capital invested

Depending on their nature, some book values might require adjustments. Some examples are purchased goodwill and amortized research and development (R&D) expenses that will have future benefits. In accordance with the circumstances, other adjustments might be required when 'out-of-book' information is known—such as litigation cases favorably decided in court, but not yet received. Stewart (1991), Copeland (1995), Feltham and Ohlson (1995), and Young (1999) have analyzed the concept and application of account components, using different levels and criteria with which to treat the figures.

## 2.4 Brazilian stock market

The *Bolsa de Valores de São Paulo* (BOVESPA) is the most important stock market in Latin America. At the time of conducting this research, 455 public companies were registered with this stock market. These companies came from several economic sectors and different geographical regions, and were of various sizes (see Appendices 1–3). According to market value of the stocks, in American dollars, this stock market is among the top ten in the world.

## 3. Research design

### 3.1 Hypothesis

The two hypotheses proposed for the regression analysis are:

**H0: The coefficients of all the predictors are equal to zero. This means that there is no relationship between the predictors and the dependent variable, and no association between the independent variables and the company's MVA<sup>®</sup> performance.**

**H1: At least one of the predictors has a coefficient different from zero. As a consequence, there is a relation between the predictors and the dependent variable. This means that at least one of the independent variables is correlated with the company's MVA<sup>®</sup> performance.**

### 3.2 Variables to be treated

The MVA<sup>®</sup> was the dependent variable used in the analysis. Independent variables (predictors) came from the answers obtained from the questionnaire (see Appendices 4–8). These were categorical variables—that is, a form of ‘dummy-variable’ coding (‘yes’ and ‘no’, classified as ‘1’ and ‘0’ respectively) was used for the field survey. The issue was to verify whether these independent variables were associated with the MVA<sup>®</sup> performance of the entity. In practical terms, this means that the MVA<sup>®</sup> of the sample was classified according to the performance—which was considered a success only if the change (when it happened) produced a positive MVA<sup>®</sup>. As consequence a positive MVA<sup>®</sup> change in the period was considered favorable and was classified as 1. All other possibilities were classified as 0. The MVA<sup>®</sup> was computed per quarter for the period from December 1995 until December 1998.

### 3.3 Data-collection process—field survey

Two different data-collection processes were used:

- for the independent variables, a field survey was conducted to ascertain what the companies *think* and *know* about the concept of value management, and whether they use management accounting for this purpose; and
- for the dependent variable, a data survey was made, capturing information from different sources to make available book numbers and market values and,

consequently, to compute the MVA<sup>®</sup> per quarter, from December 1995 until December 1998.

As explained in the research question, the aim of this analysis was to identify, from the group of variables treated in the field survey, those that were related to the companies that have improved their MVA<sup>®</sup> performance—that is, the successful group. In a practical sense, they were the companies that, in December 1998, presented a higher MVA<sup>®</sup> than in December 1995. In total, 51 companies improved their figures, even though, in some cases, the improvement did not change the sign of the MVA<sup>®</sup>, which might have been negative. The field survey was built up by adopting 5 different groups (see Appendices 4–8), which resulted in questions about:

- Group 1: management understanding of the value concept;
- Group 2: usefulness of the concept for the company;
- Group 3: accounting usage in value management;
- Group 4: company profile; and
- Group 5: respondent profile.

Groups 4 and 5 were required only for research control. They were not used as part of the analysis.

### **3.4 Data-collection process—market value added for the companies**

The MVA<sup>®</sup> calculation required information about company market value and capital invested per quarter, for the period 1995–1998. Various sources were used to obtain the number of stocks, market price, and accounting figures. For the purpose of this analysis, criteria were defined as follows.

#### **Market value**

Information was required about the number of stocks issued in each quarter—divided into the different classes and multiplied by the corresponding prices. The prices were taken as the daily weighted average of each class. This daily weighted average makes it possible to compute the monthly average. No timing adjustment was made in these prices.

#### **Capital invested**

For all cases, the audited balance sheet was considered. *Lafis* and *Economática* are suppliers of this kind of information. The *Comissão de Valores Mobiliários* is the Brazilian governmental office responsible for controlling the local stock exchange and provides some information about the quarterly reports. However, because this main source did not contain all of the required figures, other sources were needed. The statements were classified according to the MVA<sup>®</sup> criteria, and information was matched.

### **3.5 Field survey sample**

This analysis was classified as both:

- an *exploratory study* which attempted to identify, on the basis of primary data (field research) and secondary data (MVA<sup>®</sup> figures), the most important issues to be analyzed more thoroughly in future studies; and
- a *non-probabilistic sample*—considering that all companies (the whole population) received the questionnaire and, if they returned it, were included in the analysis.

As a research strategy, a probabilistic sample option was considered, but was not considered feasible—because it was impossible to obtain figures for the main variable (company value) concerning the research population. Consequently, the statistics could not be computed and the probabilistic sample could not be defined. For this reason, it was decided to perform the analysis using a non-probabilistic sample. The entire population (all of the 455 public companies) received the questionnaire. Although 106 questionnaires were returned initially, only 94 were considered in the final analysis (that is, 20.7 % of the total population of 455 sent the questionnaire back properly answered). Of these 94, only 80 consistently fitted in with respect to the market value and book value for the purpose of MVA<sup>®</sup>. This is considered a reasonable rate of return, although, in itself, it does not guarantee the quality of the research.

### 3.6 Descriptive information about the sample

Information about the sample is available in the appendices. This information includes participation per sector (see Appendix 1), different Brazilian geographical regions (Appendix 2), and net sales of the population and sample (Appendix 3).

### 3.7 Rationale for statistics

Identifying the proper statistic tool to treat the variables considered in the research was a challenge. In this specific case, logistic regression was chosen due to the need to treat non-metric dependent variables in only two groups. Logistic regression is considered relatively robust, and does not require straight assumptions. Due to the requirements of the work, logistic regression was adopted to identify the variable association with the successful group. Hair et al. (1998) discussed some advantages and possibilities of the model in comparison with other models available. Its odds ratio format is:

$$\frac{\text{Prob}^{(\text{event})}}{\text{Prob}^{(\text{no event})}} = e^{B_0 + B_1X_1 + \dots + B_nX_n}$$

[STAM1] Comentário: Which is valid in this situation?

where:

$\text{Prob}^{(\text{event})}$  = probability of event occurrence

$\text{Prob}^{(\text{no event})}$  = complementary probability of event occurrence

$B_0$  = constant

$B_1 \dots B_n$  = estimated coefficients

$X_1 \dots X_n$  = independent variables to be treated

The model compares the probability of an event occurring with the probability of its non-occurrence. The odds ratio described above captures this and, as the curve is a logarithm, the antilog is taken to provide the figures in a manner that facilitates comprehension. A positive coefficient increases the probability, whereas a negative value decreases the predicted probability.

### 3.8 Model

To provide consistency with each group of questions allowing for the different goal of each group, the model ran the figures separately. For each item, 95% was taken as the level of significance. The general criteria were as follows.

- Variables with fewer than 10 observations were eliminated.
- The manual stepwise process was processed according to the level of freedom and goodness-of-fit figures. In this way, the improvement in the log-likelihood, crossed with the level of freedom, was analyzed, and the difference of Chi-square was computed and tested in the critical range.

## 4. Information analysis and inferences

Following the process described above, Minitab software performed the regression and the following figures were produced (see the details in Appendix 9):

### Minitab outputs:

Log-likelihood = -36.504

Constant = 0.3792

Degree of freedom = 6

$p$ -value = 0.001

$p$ -Chi-square (Pearson) = 0.039

As a result of the Chi-square  $p$ , the hypothesis  $H_0$  was rejected, and  $H_1$  was accepted.

The most significant variables present in the regression were:

#### 1. Variable 1.1.1

“Management team understands that value is what should be paid by the buyer if the company is sold”—with  $p = 0.058$  and constant of 1.1711.

Value understanding is important according to this item. The positive sign of the constant implies that, the more this issue is found, the more a chance of success is expected.

### **2. Variable 1.2.3**

“Value is a concept related to specific evaluation made by external consultants”, with  $p = 0.079$  and constant of  $-1.3532$ .

This variable denotes that the company thinks that it needs outside support to get a  $p$ -value computation and improvement. This is not an ongoing task, but an on-the-spot job. This idea is not in accordance with contemporary value-management frameworks, but is a preliminary step to get there. The negative sign of the constant tells us that the firm is going in the opposite direction to that of success. In other words, the more the company thinks in this way, the more it distances itself from the successful group.

### **3. Variable 3.2.1**

“The long-term financial indicator adopted by the company is return on equity”, with  $p = 0.031$  and constant of  $-1.4134$ .

This level of significance is the most significant in the analysis. The return on equity is the most frequently used indicator worldwide. The negative sign of the constant indicates that it is going in the opposite direction to that of success. In other words, the more the company thinks in this way, the more it distances itself from the successful group. This is an interesting issue for those who agree on another long-term financial indicator—such as EVA or cash flow for example.

Some points were expected to be more important than was actually indicated by the research. In other words, a lower  $p$  was expected by the researcher.

## **Market relationship**

It was expected that the status of value management as a market concept would be fully appreciated, due to implications for the commercial focus of businesses. However, this was not confirmed.

Even though the use of residual income concepts, and particularly EVA<sup>®</sup> methodology, is thought to be very popular, such was not the case in this study. One probable reason is that it is not used by most of the companies—which makes the association weak.

Finally, regression tests were also applied to the items that explain why some companies do not use the value-management concept (2.3.1, 2.3.2, 2.3.3, 2.3.4, and 2.3.5). However, because they were not significant, they were simply ignored. We had expected to find some relation between a negative MVA<sup>®</sup> and the non-use of value management, but the

absence of such a relation might be explained by the number of respondents and the way in which the answers were spread.

## **5. Conclusions**

It is clear that, due to the way in which the field survey was constructed, it would not be appropriate to expand the conclusions to companies outside the sample. In spite of this, as an explanatory study, some significant aspects can be identified for more thorough analysis in the future. The differences between what the company *thinks* and *uses*, and the *tools* used for value management contributed to a better understanding of the market. In particular, from a group of 99 variables, 3 were found to be especially significant in predicting the success of MVA<sup>®</sup> performance (they are in the significant range or reasonably close to). Two of them were related to the way in which the company *thinks* about value management. These were: “Management team understands that value is what should be paid by the buyer if the company is sold” and “Value is a concept related to specific evaluation made by external consultants”.

Whether understood correctly or incorrectly, a conceptual framework is the basis for management and, when it is not accomplished, all work is affected. One negative and one positive sign in the constants might suggest that, in some cases, not using the proper concept can be worse than ignoring it.

The third variable of importance related to *the way the entity measures results*. This was: “The long-term financial indicator adopted by the company is return on equity”—and allows us to think about the weight of the metric in management. A metric is simply a metric, and is not, in itself, a key to success. However, it can emphasize the ‘right’ or the ‘wrong’ things that are managed by the executives and, as a consequence, can provide a proper focus for management. The market might not comprehend this. Value is the main focus for the market. If the tool fails to achieve value, the market will react negatively.

The point of view of this article is that the proper accounting tools can assist an organization in improving its value performance. Coordinated efforts, professionals, concepts, systems, and procedures can optimize the economic results, and this will be reflected in the market—assuming that there exists a satisfactory communication process. The expression ‘value management’ as it is used in this paper, should be interpreted as active management accounting in support of business decisions.

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**Appendix 1. Population and sample distribution per economic sector**

Code	Sector Description	Population		Answers	
		Nº of companies	%	Nº of companies	%
1	Food	22	4.84%	3	3.75%
2	wholesale and external trade	7	1.54%	3	3.75%
3	Automotive	15	3.30%	2	2.50%
4	Beverages	3	0.66%	0	0.00%
5	Retail	13	2.86%	6	7.50%
6	Clothing and textiles	41	9.01%	6	7.50%
7	Civil construction	22	4.84%	6	7.50%
8	Electric/electronic	15	3.30%	3	3.75%
9	Farmaceutical industry	4	0.88%	1	1.25%
10	Hygiene	2	0.44%	2	2.50%
11	Banking and similars	56	12.31%	2	2.50%
12	Civil construction materials	9	1.98%	2	2.50%
13	Mechanic	16	3.52%	3	3.75%
14	Mining	5	1.10%	1	1.25%
15	Paper and correlated	12	2.64%	2	2.50%
16	Plastic and rubber	8	1.76%	2	2.50%
17	Chemical and products	36	7.91%	5	6.25%
18	Services	26	5.71%	3	3.75%
19	Utilities	21	4.62%	5	6.25%
20	Transportation services	7	1.54%	1	1.25%
21	Siderurgy and similar	47	10.33%	9	11.25%
22	Technology of information	3	0.66%	1	1.25%
23	Telecommunications	22	4.84%	4	5.00%
24	All others	43	9.45%	8	10.00%
	Total	455	100.00%	80	100.00%

Mean	19	4.2%	3	4.2%
Std deviation	15	3.4%	2	2.9%

**Appendix 2. Population and sample distribution over Brazilian regions**

Geographical area	Population		Answers	
	No of companies	%	No of companies	%
North	7	1.54%	1	1.25%
Northwest	41	9.01%	4	5.00%
South	99	21.76%	23	28.75%
South-east	293	64.40%	49	61.25%
Central west	15	3.30%	3	3.75%
TOTAL	455	100.00%	80	100.00%

Mean	91	20.0%	16	20.0%
Std. deviation	119	26.1%	20	25.6%

**Appendix 3. Population and sample distribution per net sales**

<i>Sales Description Ranking</i>	<b>Population</b>		<b>Answers</b>	
	<i>No of companies</i>	<i>%</i>	<i>No of companies</i>	<i>%</i>
Lower than R\$ 1 million	12	2.73%	2	2.50%
Equal or higher than R\$1 and lower than R\$10 million	42	9.57%	6	7.50%
Equal or higher than R\$10 and lower than R\$20 million	28	6.38%	4	5.00%
Equal or higher than R\$20 and lower than R\$50 million	66	15.03%	9	11.25%
Equal or higher than R\$50 and lower than R\$100 million	49	11.16%	10	12.50%
Equal or higher than R\$100 and lower than R\$200 million	68	15.49%	13	16.25%
Equal or higher than R\$200 and lower than R\$500 million	74	16.86%	13	16.25%
Equal or higher than R\$500 and lower than R\$1000 million	41	9.34%	5	6.25%
Equal or higher than R\$1 and lower than R\$5 billion	49	11.16%	14	17.50%
Equal or higher than R\$5 and lower than R\$10 billion	6	1.37%	3	3.75%
Equal or higher than R\$10 and lower than R\$20 billion	2	0.46%	1	1.25%
Equal or higher than R\$20 and lower than R\$30 billion	0	0.00%	0	0.00%
Equal or higher than R\$30 and lower than R\$50 billion	2	0.46%	0	0.00%
Higher than R\$ 50 billion	0	0.00%	0	0.00%
<b>TOTAL</b>	<b>439</b>	<b>100.00%</b>	<b>80</b>	<b>100.00%</b>
	<b>Mean</b>	<b>31 7.1%</b>	<b>6 7.1%</b>	
	<b>Std. deviation</b>	<b>28 6.3%</b>	<b>5 6.5%</b>	

#### **Appendix 4. Questions asked in the questionnaire. Management understanding about value concept—Group 1**

Value management is a very proactive attitude. On the basis of results reported in a previous working paper entitled *Company value perception in Brazilian stock market*, we accepted the possibility of giving various answers to the same question:

##### **What is the company (management) understanding about value?**

- 1.1.1.What should be paid by the buyer if the company is sold?
- 1.1.2.What is the company worth to the stockholders at a certain moment?
- 1.1.3.What is demonstrated by the managerial balance sheet?
- 1.1.4.Others

##### **Value is one concept related to:**

- 1.2.1.Market.
- 1.2.2.Accounting balance sheet figures.
- 1.2.3.Specific evaluation made by external consultants.
- 1.2.4.Others

##### **What kind of decisions might impact company value?**

- 1.3.1.The ones captured by periodical management profit and loss
- 1.3.2.Investment management (fixed assets and working capital)
- 1.3.3.Cost of capital management
- 1.3.4.Others

##### **If there exists any employee bonus program, it is related to:**

- 1.4.1.Management income
- 1.4.2.Cash generated
- 1.4.3.Economic value added for the period
- 1.4.4.Company value increase
- 1.4.5.The company does not have any such program
- 1.4.6.The program is not related to financial results

**Appendix 5. Questions applied in the questionnaire. Usefulness of the concept for the company—Group 2**

**Did company value increase in the period 1994–1997?**

- 2.1.1.Yes
- 2.1.2.No
- 2.1.3.Not identified

**Company value is a concept that your company uses for:**

- 2.2.1.Management performance evaluation
- 2.2.2.Analyzing proposals for selling the company
- 2.2.3.Comparing the company figures with its competitors in the market
- 2.2.4.Business planning and control
- 2.2.5.Do not use it

**If you have answered “Do not use it” to the previous question, the reasons for that are:**

- 2.3.1.Do not consider it important
- 2.3.2.It is not clear how to do it
- 2.3.3.Although it was considered important by the management and they had the knowledge to do it, they did not have resources to deal with it
- 2.3.4.Although it was considered important by the management and they had the knowledge to do it, they did not have information systems to deal with it
- 2.3.5.Although it was considered important by the management and they had the knowledge to do it, they did not have experts to deal with it
- 2.3.6.Although it was considered important by the management and they had the knowledge to do it, they did not have enough time to deal with it
- 2.3.7.Although it was considered important by the management and they had the knowledge to do it, they did not need it since they are affiliated companies (headquarters must do that)

If you answered the previous question, go to the last question.

**Who IS at the moment responsible for company value management?**

- 2.4.1.The President (number one in the company)
- 2.4.2.Management team
- 2.4.3.Exclusively the Chief Financial Officer
- 2.4.4.Others
- 2.4.5.Nobody

**Who SHOULD BE responsible for company value management?**

- 2.5.1.Only the shareholders
- 2.5.2.Management team
- 2.5.3.Exclusively the Chief Financial Officer
- 2.5.4.Others
- 2.5.5.Nobody

**Appendix 6. Questions applied in the questionnaire. Accounting usage in value management—Group 3**

**Which methodology allows the company to manage value in a better way?**

- 3.1.1.Management income according to FASB or other similar method
- 3.1.2.EVA<sup>®</sup> (*Economic value added*), MVA<sup>®</sup> (*Market value added*) and company market value
- 3.1.3.Income computed for tax purposes
- 3.1.4.Cash flow produced

**Which is the long-term financial indicator adopted by the company?**

- 3.2.1.Return on Equity
- 3.2.2.Cash flow produced
- 3.2.3.*Economic value added* or other similar residual income
- 3.2.4.Other
- 3.2.5.None

**How often is information about company value provided to you?**

- 3.3.1.I do not receive any information
- 3.3.2.Monthly
- 3.3.3.Quarterly
- 3.3.4.Per semester
- 3.3.5.Annually

**A comparison and analysis of the relation between company market value and information provided by the accounting statements are prepared for the management?**

- 3.4.1.Yes, systematically
- 3.4.2.Yes, when it is required and asked
- 3.4.3.It is not done

## **Appendix 7. Questions applied in the questionnaire. Company profile—Group 4**

### **The stock control is originally:**

- 4.1.1.National - private control
- 4.1.2.National – government control
- 4.1.3.Multinational

### **Main sector in which the company is competing (multiple answers were received and processed):**

- 4.2.1.Industrial
- 4.2.2.Commerce – retail
- 4.2.3.Commerce – Others
- 4.2.4.Financial services
- 4.2.5.Other services

### **Number of employees working in the company:**

- 4.3.1.Up to 50
- 4.3.2.From 51 to 100
- 4.3.3.From 101 to 250
- 4.3.4.From 251 to 500
- 4.3.5.From 501 to 1000
- 4.3.6.From 1001 to 2000
- 4.3.7.From 2001 to 4000
- 4.3.8.From 4001 to 8000
- 4.3.9.More than 8001

### **The company has been active in the Brazilian market for a period that is:**

- 4.4.1.Shorter than 5 years
- 4.4.2.Equal to or longer than 5 and shorter than 10 years
- 4.4.3.Equal to or longer than 10 and shorter than 15 years
- 4.4.4.Equal to or longer than 16 and shorter than 20 years
- 4.4.5.Equal to or longer than 21 and shorter than 30 years
- 4.4.6.Longer than 30 years

### **Company net sales is properly identified in the range:**

- 4.5.1.Lower than R\$ 1 million
- 4.5.2.Equal to or higher than R\$ 1 and lower than 10 millions
- 4.5.3.Equal to or higher than R\$ 10 and lower than 20 millions
- 4.5.4.Equal to or higher than R\$ 20 and lower than 50 millions
- 4.5.5.Equal to or higher than R\$ 50 and lower than 100 millions
- 4.5.6.Equal to or higher than R\$ 100 and lower than 200 millions

- 4.5.7. Equal to or higher than R\$ 200 and lower than 500 millions
- 4.5.8. Equal to or higher than R\$ 500 and lower than 1000 millions
- 4.5.9. Equal to or higher than R\$ 1 and lower than 5 billions
- 4.5.10. Equal to or higher than R\$ 5 and lower than 10 billions
- 4.5.11. Equal to or higher than R\$ 10 and lower than 20 billions
- 4.5.12. Equal to or higher than R\$ 20 and lower 30 billions
- 4.5.13. Equal to or higher than R\$ 30 and lower than 50 billions
- 4.5.14. Higher than R\$ 50 billions

**Appendix 8. Questions applied in the questionnaire. Respondent (executive) profile—Group 5**

**At the moment, your position in the company is:**

- 5.1.1.President, General Manager or similar (number one)
- 5.1.2.Director
- 5.1.3.Manager
- 5.1.4.Other

**Levels of distance from your position to the number one is:**

- 5.2.1.No gap
- 5.2.2.One level
- 5.2.3.Two levels
- 5.2.4.More than two levels

**Your age range is:**

- 5.3.1.Younger than 25 years
- 5.3.2.Equal to or older than 25 and younger than 35 years
- 5.3.3.Equal to or older than 35 and younger than 45 years
- 5.3.4.Equal to or older than 45 and younger than 55 years
- 5.3.5.Equal to or older than 55 and younger than 65 years
- 5.3.6.Equal to or older than 65 years

**You have been in this position for:**

- 5.4.1.Less than 1 year
- 5.4.2.More than 1 year and less than 5 years
- 5.4.3.More than 5 years

**Your level of education is (if useful indicate more than one option):**

- 5.5.1.Brazilian second grade
- 5.5.2.Business administration
- 5.5.3.Economics
- 5.5.4.Accounting
- 5.5.5.Engineering
- 5.5.6.Chemistry
- 5.5.7.Others

**Appendix 9 Minitab binary logistic regression output**

## Binary Logistic Regression: Success versus V1.4.1; V1.2.3; ...

Link Function: Logit

### Response Information

Variable	Value	Count	
São posi	1	23	(Event)
	0	57	
	Total	80	

### Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI	
						Lower	Upper
Constant	0,3792	0,7633	0,50	0,619			
V1.4.1	-0,5339	0,6884	-0,78	0,438	0,59	0,15	2,26
V1.2.3	-1,3532	0,7704	-1,76	0,079	0,26	0,06	1,17
V1.1.1	1,1711	0,6182	1,89	0,058	3,23	0,96	10,83
V2.1.1	-0,1554	0,7812	-0,20	0,842	0,86	0,19	3,96
V3.1.2	-1,0027	0,6472	-1,55	0,121	0,37	0,10	1,30
V3.2.1	-1,4134	0,6564	-2,15	0,031	0,24	0,07	0,88

Log-Likelihood = -36,504

Test that all slopes are zero: G = 22,976; DF = 6; P-Value = 0,001

### Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	42,485	28	0,039
Deviance	44,271	28	0,026
Hosmer-Lemeshow	15,138	8	0,057

### Table of Observed and Expected Frequencies:

(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

Value	Group										Total	
	1	2	3	4	5	6	7	8	9	10		
1												
Obs	0	0	1	5	0	3	1	5	7	1	23	
Exp	0,2	0,6	0,8	1,8	1,9	2,8	3,6	4,8	5,6	0,8		
0												
Obs	9	11	7	6	8	5	7	3	1	0	57	
Exp	8,8	10,4	7,2	9,2	6,1	5,2	4,4	3,2	2,4	0,2		
Total	9	11	8	11	8	8	8	8	8	1	80	

### Measures of Association:

(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures
Concordant	1053	80,3%	Somers' D 0,62
Discordant	236	18,0%	Goodman-Kruskal Gamma 0,63
Ties	22	1,7%	Kendall's Tau-a 0,26
Total	1311	100,0%	