

RELATIONS BETWEEN THE USE OF ACTIVITY BASED COSTING SYSTEM AND CONTINGENCY FACTORS: EVIDENCE FROM BRAZILIAN NGOS

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Abstract: In the context of Non-Governmental Organizations, management control practices cannot simply be replicated, because due to their specificities as well as internal and external environmental contingency factors, these organizations need to make adjustments and adaptations so that these same practices can be useful for the process of decision making. This paper aims to analyze how significant are the relations between the use of the ABC system and contingency factors among Brazilian Non-governmental Organizations (NGOs). To reach this objective, a descriptive, exploratory and quantitative survey was carried out. The universe of this research was composed by all NGOs listed in the Brazilian Association of Non-governmental Organizations (ABONG). All of them were invited to participate in the survey and 43 agreed to provide information regarding the use of the ABC system and six groups of contingency factors. Data collection was performed through questionnaires sent by correspondence. All variables were operated on a six-level ordinal scale. The statistical technique used to analyze the significance of the relations tested was Kruskal-Wallis test. The results indicated evidence of statistically significant relationships between the use of the ABC method system and contingency factors related to strategy, structure, technology and culture.

Keywords: Activity Based Costing; Management Control; Non-Governmental Organizations.

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RELAÇÕES ENTRE O USO DE SISTEMAS DE CUSTO BASEADOS EM ATIVIDADES E FATORES DE CONTINGÊNCIA: EVIDÊNCIAS DE ONGs BRASILEIRAS

Resumo: No contexto de Organizações Não Governamentais, as práticas de controles gerenciais não podem ser simplesmente replicadas, pois devido às suas especificidades, bem como de fatores contingenciais ambientais internos e externos, estas organizações precisam fazer ajustes e adaptações para que estas mesmas práticas possam ser úteis para o processo de tomada de decisão. O objetivo deste artigo foi analisar a significância das relações entre o uso de sistema de custeio ABC e fatores contingenciais no âmbito de Organizações Não Governamentais (ONGs) brasileiras. A presente pesquisa do tipo survey possui características descritiva, exploratória e quantitativa. O universo desta pesquisa foi composto por todas as ONGS listadas na Associação Brasileira de Organizações Não Governamentais (ABONG). A amostra foi formada por 43 organizações que aceitaram participar e fornecer informações sobre o uso de sistema ABC e sobre aspectos associados aos fatores contingenciais. A coleta de dados foi realizada a partir de questionários estruturados. Todas as variáveis foram operacionalizadas em escala ordinal de seis níveis. A técnica estatística utilizada para analisar a significância foi o teste de Kruskal-Wallis. Os resultados indicaram evidência de relações estatisticamente significativas entre o uso de sistema de custeio ABC e fatores contingenciais referentes a estratégia, estrutura, tecnologia e cultura.

Palavras-chave: Custeio ABC; Controles gerenciais; ONGs.

1 INTRODUCTION

Non-governmental organizations (NGOs) are not driven by profit and a significant number of them have been facing managerial difficulties, mainly associated with issues related to financial resources, which have been considered as limiting factors for their achievement (Fowler, 1996; Ramadan & Pilo, 2014). In this context, Ayene, Kumar and Asefa (2014) state that NGOs need to develop financial management tools so they can be organized and customized to carry out the activities that are inherent to their respective social goals by optimizing the use of the limited resources available.

Managerial challenges most commonly identified in the context of NGOs are related to accountability, internal control, fundraising, limited financial and management experience, limited institutional capacity, low levels of self-sustainability, isolation/lack of inter-organizational communication and lack of understanding of the broader social/economic context (Mukasa, 2002; Edwards, 1994).

Performance measurement practices and management control mechanisms are management tools widely used by for-profit companies that operate in the market. Traditional financial measures, such as profitability, market value of stocks or return on investment, which are broadly used by these companies, are not useful to NGOs since they do not specifically seek to increase revenues or maximize their market value, but they seek to fulfill social goals (Spar & Dail, 2002; Gneiting, 2008). On the other hand, Gneiting (2008) points out that, in contrast to companies and governments, NGOs do not have clear management mechanisms regarding who is supposed to assess their performance.

According to Dillon (2012), the social goals of third sector organizations aim to promote public welfare, which makes it difficult to quantify their success rate, even though society is demanding better accountings that would be capable of demonstrating whether the mission of these organizations is being performed in a satisfactory manner or not.

The process of identifying the costs of activities in NGOs can be understood as a resource for accountability and assistance in reaching their strategic social goals. According to Colauto and Beuren (2013), the activity-based costing system (ABC) used in third sector entities as a managerial practice allows the identification of how these entities are consuming their resources and what factors determine these expenses.

Ribeiro and Camacho (2008) highlight the need to apply ABC costing in third sector organizations because, even as these organizations are not inserted in the competitive environment and are geared towards social goals, they still have the need to identify which activities add value to services and products, making it possible to reduce or eliminate costs. Corroborating to this perspective, previous studies highlight the need for use and possibility in the implantation, even if in a less sophisticated way when compared with companies that aim financial profit (Waters, Abdallah & Santillaán, 2001; Ip, Li & Yau, 2003; Colauto & Beuren, 2013).

Furthermore, within the context of NGOs, management practices cannot be simply replicated, because of their specificities as well as environmental contingency factors, adjustments and adaptations are to be made so that these same practices can become useful.

Both internal and external environment in which third-sector entities interact is influenced by changes that may interfere in the performance of their activities and they may also affect their performance due to contingency factors.

Ahmed (2014) observed that social, cultural and political factors can vary even within developing countries, while NGOs in developing countries work in even more uncertain environments, which makes it difficult to adopt performance measurement mechanisms. According to Wadongo (2014), there are several organizational contingency factors that influence the adoption of managerial practices in third-sector entities, which include environment, size, organizational structure, strategy, technology, culture and leadership.

Kareithi and Lund (2012) emphasize the relevance of research on the factors influencing NGO performance, noting that the trends of results from previous studies on performance are based on ideological grounds, in the absence of empirical verification. The objective of this paper is to analyze how significant are the relations between the use of the ABC system and contingency factors among Brazilian Non-governmental Organizations (NGOs).

2 THEORETICAL REFERENCE

2.1 Management controls and NGOs

The role of NGOs, as well as the understanding of the operating environment in which they operate, plays a relevant role in the contribution to the economic and social development of any country (Al-ammay & Hamad, 2012). In this context, a significant number of NGOs have been observed working for social welfare, in the construction of communities and the provision of various activities related to public service.

Over the last decades, organizations linked to the third sector, including NGOs, have been playing a relevant role in society and obtaining a growing relevance in the world economy, as their purpose is to solve social problems (Quinteiros, Silva, Costa & Oliveira, 2009; Cruz, Stadler, Martins & Rocha, 2009). Particularly in the 1990s, the role of these organizations strengthened along with interest and concern with management practices and, consequently, accountability of NGOs to stakeholders (Kaplan, 2001; Nanavati, 2007; Kareithi & Lund, 2012).

According to the Brazilian Institute of Geography and Statistics - IBGE (2012), there was an increase in the number of entities linked to the third sector in Brazil, from 267.3 thousand to 290.7 thousand. This expansion demonstrates their importance, since they provide support for governments to formulate public policies and provide services to society, as well as contribute to increasing flexibility and agility in public management processes (Gomes & Lidle, 2009).

Another relevant aspect linked to NGOs is the need for transparency, as donors often provide financial resources to these organizations without demanding cash dividends, when compared to for-profit organizations, but they hope to have instruments that are capable to provide an adequate way of monitoring the effective fulfillment of the social objective they intend to achieve (Kendall & Knapp, 2000; Moxham, 2009). According to Moxham (2014), the growing search for information and activity reporting to NGOs has been attributed as a response to financial scandals in the 1990s, as well as uncertainties about the effectiveness of third sector organizations as a whole.

Based on this understanding, the adoption of management controls within the scope of NGOs may enable the monitoring of their performance, as well as generate relevant information to the elaboration of management reports that can describe the various activities carried out, and also support in demonstrating the use of the financial resources received and to account for the manner in which they were used.

Moxham (2014) states that the use of management tools by NGOs can be motivated, regardless the improvement of social programs in which they are involved, by the search for legitimization to their activities in relation to their several stakeholders. According to Gneiting (2008), the analysis of performance in the context of NGOs can also help these organizations to increase their legitimacy by adapting to the systems of norms, values and beliefs in force within the country, promoting learning and adaptation to the various contingency aspects (unstable and complex) in the environment of action, mainly for contributing to its survival through the presentation of visible results of the work done.

According to Moxham (2014), controlling and measuring the performance of activities carried out by third sector organizations can contribute to the improvement of efficiency and effectiveness, as it demonstrates how managerial information would be used to guide the organization in meeting its strategic goals. Hillel (2002) realizes that evaluating effectiveness and efficiency of organizations in this sector is challenging due to three key reasons: (i) these organizations generally work to change human behavior; (ii) the effectiveness indicators are ambiguous; (iii) the product generated by third sector organizations is generally intangible.

Management control is associated with an administrative function responsible for monitoring the activities carried out within the organizations. Control activities are associated with procedures, tools, performance measures and incentive system used to guide and motivate in order to achieve the organizational goals (Atkinson, Kaplan, Matsumura & Young, 2015).

According to Anthony and Govindarajan (2008), management controls correspond to the processes by which managers influence the members of the organization to achieve its strategic objectives. On the other hand, Canan and Fonseca (2006) observe that managerial controls help in the identification of elements that enable entities to associate the strategies established by the administration with the employees' response.

Management control is important for getting to know the level of performance achieved and how close to the desired result it was in relation to what had been planned, making it possible to redirect, emphasize and adjust the actions to achieve the previously defined objectives (Frezatti, 2013). Corroborating this perspective, the managerial control that aims to guarantee the effectiveness (efficacy and efficiency) of resource utilization in line with the strategic objectives of the entities, is influenced directly or indirectly by the business contexts of each organization, such as: leadership, culture, organizational structure, among other contingency factors (Otley, 1994). Therefore, managers' responsibilities increase in these conditions, since they need to be constantly adjusting their management control practices to ensure the survival of any type of organization.

In the scope of non-governmental organizations (NGOs), which have historically paid little attention to aspects of management control, the adoption of auxiliary managerial tools to support management has been considered as a way to make more efficient the use of funds raised, and to increase the volume of these resources, with the intent of meeting their social objectives and, consequently, to survive in the market (Carvalho, 1999).

According to Wadongo (2014), even though there are demands from the external environment of NGOs towards the implementation of more sophisticated managerial practices, factors such as uncertainty, environmental dynamism, strategy and technology have been ignored. NGOs need to keep track of changes both inside and outside the organization as to determine their ability to grow and improve constantly, even by increasing the accountability of their employees, as they are essential for driving strategic objectives and aligning them with the organizational objectives (Sharma, 2012).

2.2 Activity Based Costing

At the end of the 1980s came out the concept of ABC method, idealized by Cooper and Kaplan. Activity-based costing is different from traditional costing, because of the way through which costs are calculated. The traditional system uses a two-step accumulation model. Initially the costs are accumulated by function, sector or department and after that they are divided by the products generated through a simple factor, based on measurement volume. Activity-based costing is grounded on resources and activities that are cost drivers, while traditional costing is based on products generated as cost drivers (Cogan, 2006). Corroborating to this understanding, activity-based costing differs from traditional costing in three ways: (i) non-production costs and production costs can be attributed to products, but only on a cause and effect basis; (ii) some production costs can be excluded from product costs and, finally, (iii) numerous overhead groupings are used, each of which is allocated to products and other cost objects using its unique activity measure (Garrison, Noreen & Brewer, 2013).

The ABC emerged with the primary objective of addressing the shortcomings of traditional methods, being considered as main benefit the cost-based calculation of activities to determine the costs of goods or services produced by the company (Dalmácio, Rezende & Aguiar, 2007).

According to Martins (2008, p.87), "Activity-Based Costing (ABC) is not limited to the costing of products. It is, above all, a powerful tool to be used in cost management."

Sabadin, Grunow and Fernandes (2005) define activity-based costing as a method whose main objective is to quantify the activities performed by a company, using drivers to allocate expenses in the most real way possible to products and services. The basic principle of ABC method says that activities are responsible for the existence of costs, and the items produced bear the same costs, through the activities they require. In practice, ABC method leads to data tracking that is not normally considered in traditional costing methods. Thus, it helps to reshape the managerial mentality in organizations where it is being used.

ABC method is an interesting way to improve the Traditional Costing System, especially in relation to the objective of administrative decision making, such as price determination, introduction and elimination of products and / or services, and in relation to recent philosophies about production management processes focused on quality and competitiveness, due to its greater conformity (Khoury & Ancelevicz, 2000).

ABC is an important tool for providing cost information to managers, as it allows a critical analysis of every relevant activity within the entity and throughout its value chain, thus allowing the identification and elimination of activities which are not adding value, enabling managers to apply appropriate techniques to reduce waste of materials, labor and other expenses that may represent significant portions of the organization's total costs (Mauss & Costi, 2006).

Borges and Silva, in turn, (2000) assert that the fundamental assumption of ABC is that resources are used by the goods and services elaborated by the company, generating costs. Department costs must be prorated among the items produced. And the company's resources are consumed by the activities that are developed in it, products, in turn, use activities. The set of activities ends up being the cost generator.

Sinisgalli, Urbina and Alves (2009) note that ABC always focuses on the activities and not on the company's products, facilitating distortions to be avoided throughout the information about the cost of products generated, which usually appear when some traditional costing method is used, and thus enables more accurate information about costs to be given to managers. In this way, the basic assumption of this costing method is to find the activities of a company and measure the cost of these activities, and

then measure the cost of the product based on the consumption of each activity. During the production, resources are consumed by activities and the demand for activities is created by products.

ABC's main objectives are: obtaining more detailed information on the costs of items produced and / or services provided, identifying costs related to the activities and the reasons for these activities to be undertaken. This form of costing is based on the idea that activities generate costs and that the items produced and the services provided cause a demand for these activities. The ABC system uses the activities developed in the company's operating processes, such as linking indirect costs to cost objects, defined as products, product lines, services, customers, etc. (Khoury & Ancelevicz, 2000).

Activity-based costing is designed to generate more accurate information about production and support activities as well as product costs so that the administration can focus its attention on the products and processes with a higher leverage to increase the entity's profits (Jones & Dugdale, 2002).

The starting point for an activity-based costing method is to identify the activities developed within the entity. These are the activities that represent significant values in terms of costs. By analyzing the activities, it is possible to decompose a complex structure into its manageable items, while allowing management a clear view of how the company resources are being used (Sabadin, Grunow & Fernandes, 2005).

As the ABC system deals with activities and not with products, it ends up to be a great advantage; for this reason, it is very appropriate that it be implanted in entities where there is no final product that cannot be stored. In entities providing services, considering that they do not have inventories, the costs calculated by activities show better results (Fama & Habib, 1999).

The main objective of the ABC system is the same objective of accounting, i.e., generating information to aid the decision-making process, but in the case of activity-based costing the intended objective is to improve the competitiveness of companies and the planning of long-term actions. With its power to track and signal the "motives" that lead to overhead costs, ABC makes it possible to eliminate arbitrary apportionment. (Mauss & Costi, 2006).

The literature regarding the factors which influence the use of the ABC system has been modified over the years, as technical factors have been replaced by contingency factors have been the main influencers for the success of the management control instrument (Fei & Isa, 2010; Elhamma & Fei, 2013).

Gosselin (1997) conducted a survey among 161 Canadian companies to examine the effects of strategic posture and organizational structure on the adoption and implementation of general forms of ABC. The results showed that a prospective strategy was associated with the managerial decision to adopt ABC, while centralization and formalization were significantly associated with the success of ABC implementation.

The study by Bjørnenak (1997) emphasized the diffusion of the ABC system in Norway. The study was based on a survey of 75 of the largest industries, obtaining a response rate of 57%. The results show that a large number of companies have adopted ABC as an idea, that is, have implemented ABC or plan to do it (40%). Some factors were tested to explain the influence on the use of ABC, such as size, cost structure, competition, existing costing system and product diversity. The results revealed that only the cost structure was statistically significant.

Krumwiede (1998) carried out a study with American industries in order to test how contingency factors affect the stages of the ABC implementation process. The results showed that different factors affected the various application phases of ABC, such as technology, organizational uncertainty and size.

Anderson and Young (1999) investigated the relationship between ABC's success, with contextual and organizational factors, such as organizational structure and information technology, in American

industries. The main results indicated that contingency factors affect the companies analyzed in the ABC implementation phase.

Baird, Harrison and Reeve (2004) carried out a study to investigate the relationship between the use of ABC and the organizational variables of size, utility of the decision of cost information and culture. In his research, the data were collected through a survey of companies in Australia. The main findings revealed significant relationships between the adoption of ABC with the utility of decision and cultural dimensions.

In the context of developing countries, Elhamma and Fei (2013) focused on investigating the relationship between ABC, business strategy and organizational performance in 62 Moroccan companies. Regarding the use of the system, 12.9% of the companies that responded reported using the ABC method. On the other hand, considering contingency factor, the results indicated that the business strategy has no significant influence on the use of ABC. And finally, companies that use ABC present the best organizational performance.

In the same direction, Al-Nuaimi, Mohamed and Alekam (2017) investigated relationships between information technology, ABC implementation and organizational performance of banks in Iraq. This study surveyed 150 major bank accountants in Northern Iraq. The study revealed that there is a significant relationship between information technology, ABC application and organizational performance.

Finally, the research by Albalaki, Abdullah and Kamardin (2019) examined the mediating effect of ABC implementation on the relationship between external contingency factors and organizational performance, in 114 industries in Iraq. The results revealed that organizational uncertainty and market orientation have a positive and significant effect on the implementation of ABC, and that the implementation of ABC has a positive and significant effect on organizational performance.

As previously mentioned, research over the years has been concentrated on for-profit companies, so that specific studies in the third are still preliminary, without covering contingent factors and survey research (Waters, Abdallah & Santillaán, 2001; Ip, Li & Yau, 2003; Colauto & Beuren, 2013).

The study by Waters, Abdallah and Santillaán (2001) describes the application of the ABC system to calculate the unit costs for a health service provider in Peru. The study concluded that the application of ABC in developing countries is feasible, resulting in results directly applicable to prices and management.

The research carried out by Ip, Li and Yau (2003), investigated how the ABC system can be applied to an NGO in the Hong Kong Special Administrative Region in determining activity and service costs, analyzing activity and service performance and measuring the connection between inputs and outputs. The results indicated that the feasibility of applying the ABC system and its influence on improving the organization's performance.

In Brazil, Colauto and Beuren (2013) carried out a study in order to describe the process of producing the menu of a philanthropic hospital institution. The results indicated that the information generated by the ABC costing system allowed the identification of how the entity was consuming its resources in the nutrition and dietary sector, and what factors determined these expenditures.

3 METHODOLOGY

Based on the objective proposed to carry out this research, the methodological procedures required for its operationalization were established considering its distinct stages.

The first aspect associated to the methodological procedures was the typification of the research. This research can be categorized as being descriptive and exploratory, carried out through a field study with

quantitative approach. For Gil (2010), descriptive researches are interested in discovering and observing phenomena, of a population or of an experience, trying to have them described, classified and interpreted. Andrade (2010) presents exploratory researches as those that seek to provide more information on a certain subject. Marconi and Lakatos (2010) characterize field surveys as those that aim to obtain information and / or knowledge about a problem, for which a response is sought, or a hypothesis, that one is willing to prove, or even to discover new phenomena or relations among them. Richardson (1999) argues that quantitative surveys are those that are characterized by the use of quantification, from the information collected to the final analysis, through statistical techniques, regardless their robustness.

The second aspect referring to methodological procedures was to define the universe to be considered in this research. The research universe consisted of all Brazilian NGOs listed in the Brazilian Association of Non-governmental Organizations (ABONG), totaling 240 registered NGOs, forming the organizations that are the object of this research. These NGOs carry out activities in several thematic fields, being able to help society with their specialized services in different needs (Agriculture; Art and Culture; Social Assistance; Communication; Trade; Racial Discrimination; Sexual Discrimination; Solidarity Economy; Education; Sport; Strengthening of Other NGOs / Popular Movements; Justice and Promotion of Rights; among others). The choice of ABONG was based on the fact that it is considered the oldest and most respected entity in the third sector and has been responsible for promoting political construction interchanges, as it has a broad network of intervention, mainly focused on councils and conferences on public policies and, above all, other networks and forums on topics of interest to all organizations, such as the regulatory framework for the sector (Abong, 2015). In addition, ABONG requests that its members have, compulsorily, minimum practices of managerial controls, which makes this research feasible.

The third aspect inherent to the methodological procedures of this research regards its variables. For this research two groups were considered, namely: ABC system; contingency factors. The contingency factors considered in this research extracted are presented below:

- Size: Number of employees, and amount of financial resources raised (Thomson, 2010);
- Organizational strategy: Aggressiveness, analysis, future internal and external defense, pro-activity risk, and innovation and change in strategy (Akingbola, 2006; Waweru & Spraakman, 2009);
- Organizational structure: Degree of centralization, degree of formalization, and degree of stratification, degree of complexity (Wadong, 2014);
- Technology: Technological complexity, uncertainty in the task, technological dependence, and modern IT application (Wadongo, 2014; Al-Ammary & Hamad, 2012);
- Organizational culture: Proactive/reactive culture, flexible/rigid culture, collectivism/individualism, and centralization/decentralization;
- Leadership: Excellence in management, effectiveness of the board, and best practices and management.

Size factor was operationalized through 2 questions, which were segregated into class intervals with the number of employees and fundraising. Regarding the number of employees, respondents needed to indicate ranges that varied between four options: with up to 19 employees; from 20 to 99 employees; 100 to 499 employees and more than 500 employees. Regarding fundraising, respondents were asked

to indicate ranges between 3 options: the first up to R \$ 360,000.00; the second from R \$ 360,000.01 to R \$ 3,600,000.00 and, finally, the last above R \$ 3,600,000.00

Strategy factor was operationalized through 9 questions, about the variables aggressiveness, analysis, external and internal defense, future, proactivity, risk, innovation and change in strategy. Thus, the questions specified statements to verify the degree of agreement of the respondents, as an example the NGO constantly tried to be among the main NGOs in Brazil; the NGO analyzes daily operations to inform decision making; the NGO constantly seeks close relations with stakeholders; the NGO embarks on risky financed projects that are beyond its mission and focus, among others.

Structure was operationalized through 4 questions, based on the decentralization variables; formalization; stratification and complexity. Thus, questions were asked about the extent to which the organization emphasized the following aspects of the organizational structure: participation of staff / volunteers in the formal decision-making process; formal job descriptions and observance of written rules and regulations; friendliness and closeness between managers, employees and volunteers and, finally, professional training of staff and professional specializations.

Technology was operationalized through 4 questions, based on the variables technological complexity, task uncertainty, technological independence. In this regard, statements were made reflecting the characteristics of the tasks of NGO staff, as an example, employees work with tasks that depend on standardized procedures and automated by processes; tasks involve a variety of activities; team tasks are highly dependent on other team tasks, among others. In a complementary way, the contingent factor of information technology also used 4 questions, based on the application of modern IT, such as specialized software; communication technologies and management information systems.

Culture was segregated into 5 questions, based on the following variables: proactive / reactive culture; flexible / rigid culture; collectivism / individualism and centralization / decentralization. In this sense, respondents were asked to indicate the level of agreement with statements that reflect the organizational culture, as an example, employees think proactively and try to avoid potential problems; employees are receptive to new ideas and regulations; there is an atmosphere of cooperation, loyalty and good informal relations, among others.

Leadership covered 4 questions, about the variables management excellence, board effectiveness, best practices and management style. Thus, respondents indicated the level of agreement with statements that reflect the NGO's leadership style, such as: the management team likes to take risks and think proactively; the management team emphasizes management practices in the private sector; the management team has an excellent working relationship with the board of directors and the board of directors provides sufficient guidance and global leadership for the NGO.

It should be noted that all contingency factors were operationalized through a six-level ordinal scale, ranging from totally disagree to totally agree, except for the size variable that was segregated for multiple choice questions with class intervals. The use of the ABC costing system was operationalized through an ordinal scale of five levels, ranging from never to forever.

The fourth aspect related to methodological procedures was the establishment of data collection. As data collection technique, a correspondence survey was carried out, using a standardized and structured questionnaire, based on the researches of Ferreira and Otley (1999) and Wadongo (2014), regarding contingency factors and the scales used. According to Andrade (2010), standardized data collection is appropriate for descriptive research. All the NGOs listed were contacted and invited to participate in the survey through electronic correspondence and 43 out of them agreed to participate in the survey,

representing a response rate of approximately 18%. The data collection period was approximately 3 months. The questionnaire was electronically made available for response via "Google Docs".

The fifth aspect regarding methodological procedures was the definition of the statistical technique adopted to analyze the significance of the various relationships tested. Considering the nature of the variables considered, descriptive statistics and Kruskal-Wallis test were applied. Levine, Berenson and Stephan (2000) emphasize that this test investigates the significance of the observed differences in three (or more) data groups. For these authors, this test has the same level of efficacy as the F test, as well as the statistics of its hypothesis test is closer to a chi-square distribution insofar as each of the groups considered has a size greater than five.

The results that obtained values equal to or greater than 95% ($p = 0.05$) were considered significant. All statistical procedures were operated through STATISTICA for Windows.

4 RESULTS

From the information collected through the answers provided, data was gathered and used to both to describe and analyze the statistical significance of the relationships between the use of the ABC costing system and the contingency factors considered.

The main results of the descriptive statistics refer to the use of the ABC costing system among NGOs. It revealed that one third of them always use it, and 9.52% informed that they never use the ABC costing system in the management process. These results are similar to those of more recent international studies.

In the context of developing countries, Elhamma and Fei (2013) highlighted that 12.9% of companies reported using the ABC method. While in the research by Albalaki, Abdullah and Kamardin (2019) indicating that 53% of the interviewees accused of using the ABC system.

In Brazil, Khoury (1999) carried out a survey in 1996 in the 500 largest companies listed in Exame Magazine - Melhores e Maiores and the results showed that 18% of the sample used ABC. Concomitantly, Beuren and Roedel (2002) replicated the study by investigating the largest companies of Santa Catarina, and the findings pointed out that only 7% of the sample used the ABC system.

Regarding the results of the statistical relations, the first contingent factor was related to the size of the NGOs, shown in table 1.

Table 1: Analysis on the significance of the relations between the use of ABC system and contingency factors associated with size

Factors	p
Funds raised	0,42
Number of employees	0,74

Source: Research Data

Based on the results obtained, it was verified that none of the contingency factors adopted to represent the size attained a statistically significant result, suggesting that size does not influence on the adoption of ABC systems in the scope of these organizations. These results are similar to the study by Bjørnenak (1997), as the size did not influence the use of the ABC system in the context of companies in Norway. However, it contradicts Krumwiede's (1998) research in American companies, as the size positively influenced the stages of the ABC implementation process.

The second group of contingency factors considered was related to the strategy of the NGOs surveyed. The results obtained are shown in Table 2.

Table 2: Results regarding the relations between the use of ABC system and contingency factors associated with the strategy

Factors	p
Aggressiveness	0,87
Analysis	0,04
External defense	0,25
Internal defense	0,01
Future	0,00
Proactivity	0,10
Risk	0,34
Innovation	0,15
Change in strategy	0,06

Source: Research Data

Regarding the results, it was verified that three of the contingency factors belonging to this group were related in a statistically significant manner to the use of ABC system. Strategic priority for analysis, internal defense and future, which emphasize decision making and long-term planning, were shown to be associated with the use of the ABC system within the scope of the NGOs analyzed. These results corroborate with the study by Gosselin (1997), which verified that the strategy was associated with the managerial decision to adopt and implement the ABC system. Nevertheless, it differed from the research by Elhamma and Fei (2013), which identified that the business strategy has no significant influence on the use of ABC.

The third group of contingency factors considered was related to the structure. The results obtained are presented in table 3.

Table 3: Results regarding the relations between the use of ABC system and contingency factors associated with the organizational structure

Factors	P
Decentralization	0,18
Formalization	0,04
Stratification	0,00
Complexity	0,06

Source: Research Data

Evidence found in the results obtained indicated that two of the contingency factors related to the organizational structure have a statistically significant relationship with the use of ABC system (formalization and stratification). Decentralization and complexity did not produce significant results. These results are similar to those from the study by Anderson and Young (1999), indicating that the organizational structure affects the implementation phase of the ABC system in American industries. However it contradicts Gosselin's research (1997) which found that the organizational structure did not present a statistically significant relationship.

The fourth set of contingency factors tested was composed of aspects related to technology. The results obtained can be observed in table 4.

Table 4: Results regarding the relations between the use of ABC system and contingency factors associated to the technology

Factors	P
Standardized and automated activities	0,02
Variety of activities	0,18
Clear and easily analyzed tasks	0,00
Highly dependent tasks	0,02

Source: Research Data

From the results found, it was evidenced that the use of ABC systems was related to three out of four contingency factors tested. As a highlight, the characteristic factors related to standardized, automated, clear, easily analyzed and dependent tasks were related to the use of this type of costing system, corroborating with the study carried out by Krumwiede (1998) that found significant relations between technology and the implementation of ABC. These results are consistent with the results presented in table 3, consolidating the perspective that the context of the activities (complexity, decentralization and variety) is not considered favorable to its adoption.

Still on technology, specific contingency factors inherent to Information Technology (IT) were considered. The results are shown in table 5.

Table 5: Results regarding the relations between the use of ABC system and contingency factors associated with Information Technology (IT)

Factors	p
Computers/laptops	0,81
Internet	0,06
Software	0,48
Communication Technologies	0,45
Information systems	0,53

Source: Research Data

Through the results obtained, it can be seen that none of the factors tested had a statistically significant result. This result indicates that aspects related to Information Technology (IT) are not linked to more favorable conditions for using ABC systems.

These results contradicted previous studies such as Anderson and Young (1999) and Al-Nuaimi, Mohamed and Alekam (2017) which had pointed out positive and significant relationship between TI and the ABC system.

The fifth group of contingency factors considered in this research was related to cultural aspects of the organizations investigated. The results are shown in table 6.

Table 6: Results regarding the relations between the use of ABC system and contingency factors associated with Culture

Control systems	p
Proactive thinking	0,01
Receptive to new ideas	0,02
Cooperation, loyalty and good relations	0,02
Open, with team spirit and unity	0,01
Consensus and participation	0,02

Source: Research Data

Based on the results obtained, it can be observed that all cultural aspects investigated have been related to the use of ABC system in a significant way. This result points to evidence that supports a significant influence of cultural aspects in the context of NGOs regarding the adoption of ABC systems as a tool to support internal control in these organizations, corroborating the study carried out Baird, Harrison and Reeve (2004) that also identified significant relationships between the adoption of ABC with culture.

The sixth set of contingency factors tested in this research is associated with leadership aspects. The results obtained are presented in table 7.

Table 7: Results regarding the relations between the use of ABC system and contingency factors associated with Leadership

Control systems	p
Take risks and think proactively	0,03
Private Sector Management Practices	0,17
Working relationship with directors	0,08
Council provides guidance and leadership	0,33

Source: Research Data

Similar to the results shown for IT contingency factors, none of the factors related to leadership obtained a statistically significant result, indicating that leadership is not associated with the use of ABC systems.

These results provide significant empirical evidence for understanding the relationships between the use of ABC systems and contingency factors within NGOs, as well as demonstrating that the identification of specific factors associated with the use of this management control tool may generate relevant information for assisting the understanding of their operational performance based on the analysis of the various activities performed throughout the rendering of services to society.

5 CONCLUSIONS

The objective of this article was to analyze the significance of the relations between the use of ABC system and contingency factors in the scope of Brazilian Non-governmental Organizations (NGOs). To do so, a field survey was carried out by means of a correspondence survey, based on the researches of Ferreira and Otley (2009) and Wadongo (2014), with 43 organizations listed in ABONG.

The results obtained pointed to statistically significant evidences in relation to the use of ABC systems and contingency factors belonging to four out of six groups tested (strategy, structure, technology and culture), indicating that the managerial adoption of such systems is associated to several internal aspects of the NGOs investigated. In this sense, the present research identified several statistically significant relationships that can contribute to specific literature on management controls in general, as well as to the adoption of ABC systems in particular, within the context of third sector organizations.

Regarding the results of the relations between the use of ABC systems and the actual internal contingency factors, it is worth mentioning the findings about the factors related to technology and culture, where almost all factors considered were related in a significant way, providing consistent evidence that these two factors have a decisive influence on the use of this internal control tool to the fulfillment of the NGOs investigated.

This study can corroborate with the contingency theory in the sense that the conception and application of the ABC costing system is influenced by the organizational environment of the NGOs, in which this managerial control operates. Thus, the use of the ABC system itself in other third sector organizations can be affected by the contextual characteristics of the organizations shown, which go beyond technical factors of the system, such as the identification of the main activities and resources that generate costs.

Given this scenario, research can contribute to the still scarce literature on the use of the ABC costing system in third sector organizations. And, above all, the influence of contingency factors in the implementation and customization of the controls used by managers and presidents of NGOs. Thus, the study may present more comprehensive empirical evidence, with regard to the survey carried out and the methods of analysis employed not based only on ideological aspects.

From these findings, several axes of further research can be traced to provide a more in-depth understanding on the adoption of management control tools by non-profit organizations that can provide more robust parameters on this subject that has not yet been much investigated so far.

Although the results obtained cannot be extrapolated to all third sector organizations, the evidence observed in this exploratory research suggests that this field of research still has strands to be explored in greater depth.

REFERÊNCIAS

Ahmed, Z. A. (2014). Management control issues in Non-Governmental Organisations (NGOs): an evaluation of contingency factors and potential for future research. *Int. J. Managerial and Financial Accounting*, 6 (3), 251-271.

Akingbola, K. (2006). Strategic choices and change in non-profit organizations. *Strategic Change*, 15 (6), 265-281.

Al-ammary, J. & Hamad, S. (2012). Information technology for enhancing NGOs' performance in the kingdom of BAHRAIN. *International Journal of Electronic Commerce Studies*, 3 (1), 111-120.

Albalaki, F.M.M., Abdullah, Z. & Kamardin, H. (2019). The Influence of External Contingency Factors and Activity-Based Costing Implementation on Organizational Performance. *Jurnal Pengurusan*, 55(2019), 111-124.

Al-Nuaimi, S.I.M., Mohamed, R. & Alekam, J.M. (2017). The Link between Information Technology, Activity-based Costing Implementation and Organizational Performance. *International Review of Management and Marketing*, 7(1), 452-457.

Anderson, S.W & Young, S.M. (1999). The impact of contextual and process factors on the evaluation of activity-based costing systems. *Accounting, Organizations and Society*, 24(7), 525-559.

Andrade, M.M. (2010). *Introdução à Metodologia do Trabalho Científico*. 10 ed. São Paulo: Atlas.

Anthony, R. N. & Govindarajan, V. (2008). *Sistemas de controle gerencial*. São Paulo: McGraw Hill.

Associação brasileira de organizações não governamentais (2015). Retrieved from <http://www.abong.org.br/>.

Atkinson, A. A., Kaplan, R.S., Matsumura, E.M., & Young, M. (2015). *Contabilidade Gerencial: Informação para Tomada de Decisão e Execução da Estratégia*. 6.ed. São Paulo: Atlas.

Ayene, M.; Kumar, R.; & Asefa, W. F. (2014). Assessment of Financial Management Practices in Local NGOs-A Case of Local NGOs in Addis Ababa. *IFSMRC AIJRM*, 2 (3), 1-31.

Baird, K.M., Harrison, G.L. & Reeve, R.C. (2004). Adoption of activity management practices: a note on the extent of adoption and the influence of organizational and cultural factors. *Management Accounting Research*, 15(4), 383-399.

Beuren, I. M. & Roedel, A. (2002). O uso do custeio baseado em atividades: ABC (Activity Based Costing) nas maiores empresas de Santa Catarina. *Revista Contabilidade & Finanças - USP*, 13(30), 7-18.

Bjørnenak, T. (1997). Diffusion and accounting: the case of ABC in Norway. *Management Accounting Research*, 8(1), 3-17.

- Borges, A., & Silva, T.M. (2000). O custeio ABC aplicado em instituições filantrópicas de ensino. *Revista Sociais e Humanas – UFSM*, 13 (1), 2000.
- Canan, I. & Fonseca, A. C. P. (2006). Sistemas de controle gerencial: estudo de caso nas empresas Bunge e Amaggi. *Revista Capital Científico*, 4 (1), 1-22.
- Carvalho, C.A.P. (1999). El Control Organizativo en las Organizaciones No Gubernamentales: un Estudio de la Realidad Española. *Revista de Administração Contemporânea*, 3 (3), 37-56.
- Cogan, S. (2006). Custeio ABC e Outras Sistemáticas de Custeio: Uma Proposta de Aperfeiçoamento. *Sociedade, Contabilidade e Gestão*, 1(1), 16-27.
- Colauto, R. D., & Beuren, I. M. (2003). O custeio baseado em atividade para apuração dos custos de uma organização hospitalar filantrópica. *Contabilidade, Gestão e Governança*, 6(2), 9-36.
- Cruz, J.A.W., Stadler, H., Martins, T.S. & Rocha, D.T. da. (2009). Avaliação de desempenho no terceiro setor: uma abordagem teórica de strategic accounts. *Revista Brasileira de Estratégia*, 2 (1), 11-26.
- Dalmácio, F. Z., Rezende, A. J., & Aguiar, A. B. (2007). Uma aplicação do Time-Driven ABC Model no setor de serviço hospitalar: a nova abordagem do ABC proposta por Kaplan e Anderson. *Contabilidade Vista & Revista*, 18 (2), 11-34.
- Dillon, B. (2012). Organizational Leadership and the Balanced Scorecard: Lessons to be learned from Marketing Activities in a Nonprofit Setting. *International Journal of Business and Social Science*, 3 (15), 105-112.
- Edwards, M. (1999). NGO performance—what breeds success? New evidence from South Asia. *World Development*, 27 (2), 361-374.
- Elhamma, A. & Fei, Z.Y. (2013). The relationship between activity based costing, business strategy and performance in moroccan. *Accounting and Management Information Systems*, 12(1), 22-38.
- Fama, R., & Habib, C.V.S. (1999). IMPLANTAÇÃO DO SISTEMA DO CUSTEIO ABC EM EMPRESA PRESTADORA DE SERVIÇOS DE SAÚDE: VANTAGENS E LIMITAÇÕES. Paper presented at the meeting of Congresso Brasileiro de Custos.
- Fei, Z.Y. & Isa, C.R. (2010). Factors Influencing Activity-Based Costing Success: A Research Framework. *International Journal of Trade, Economics and Finance*, 1(2), 144-150.
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis, *Management Accounting Research*, 20(4), 263-282.
- Fowler, A. (1996). Demonstrating NGO performance: problems and possibilities. *Development in Practice*, 6 (1), 58-65.
- Frezatti, F. (2013). *Orçamento empresarial: planejamento e controle gerencial*, 5ed. São Paulo: Atlas.
- Garrison, R.H., Noreen, E.W. & Brewer, P.C. (2013). *Contabilidade Gerencial*. 14ed. Porto Alegre: AMGH.
- Gil, A. C. (2012). *Como elaborar projetos de pesquisa*. 5ed. São Paulo: Atlas.
- Gneiting, U. (2008). Assessing the Effects of Market-Based Performance Measurement on NGOs. *Journal of Development and Social Transformation*, 5, 33-42.
- Gomes, R. C. & Liddle, J. (2009). The balanced scorecard as a performance management tool for third sector organizations: the case of the Arthur Bernardes foundation, Brazil. *BAR*, 6 (4), 354-366.

- Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society*, 22(2), 105-122.
- Hillel, S. (2002). Relationships between organizational properties and organizational effectiveness in three types of nonprofit human service organizations. *Public Personnel Management*, 31, 377-395.
- Instituto Brasileiro de Geografia e Estatística. (2012). *As Fundações Privadas e Associações Sem fins Lucrativos no Brasil*. Rio de Janeiro: IBGE. Retrieved from ftp://ftp.ibge.gov.br/Fundacoes_Privadas_e_Associacoes/2010/fasfil.pdf.
- Ip, P.C., Li, P.W. & Yau, J.S. (2003). Application of activity-based costing (ABC): The case of a non-government organization. *International Journal of Management*, 20 (3), 282-293.
- Jones, T. C. & Dugdale, D. (2002). The ABC bandwagon and the juggernaut of modernity. *Accounting, Organizations and Society*, 27 (1-2), 121–163.
- Kaplan, R. S. (2001). Strategic performance measurement and management in nonprofit organizations. *Nonprofit Management and Leadership*, 11(3), 353-701.
- Kareithi, R.N.M. & Lund, C. (2012). Review of NGO performance research published in academic journals between 1996 and 2008. *South African Journal of Science*, 108 (11-12), 1-8.
- Kendall, J. & Knapp, M. (2000). Measuring the performance of voluntary organizations. *Public Management Review*, 2 (1), 105–132.
- Khoury, C. Y. (1999). ABC - sistema de custos baseado em atividades: uma pesquisa de sua utilização no Brasil. *RAE - Revista de Administração de Empresas*, 39(4), 55-63.
- Khoury, C. Y. & Ancelevicz, J. (2000). Controvérsias acerca do sistema de custos ABC. *RAE - Revista de Administração de Empresas*. ERA. 40 (1), 56- 62.
- Krumwiede, K.R. (1998). The implementation stages of activity-based costing and the impact of contextual and organizational factors. *Journal of Management Accounting Research*, 10, 239-277.
- Levine, D. M., Berenson, M. L. & Stephan, D. (2000). *Estatística: Teoria e prática*. Rio de Janeiro: LTC.
- Marconi, M.A. & Lakatos, E.M. (2010). *Fundamentos de metodologia científica*. 7ed. São Paulo: Atlas.
- Martins, E. (2008). *Contabilidade de custos*. 9ed. São Paulo: Atlas.
- Mauss, C.V., & Costi, R. M. (2016). O Método de Custeio ABC como instrumento de gestão. In: *Simpósio de Excelência em Gestão e Tecnologia*, Paper presented at the meeting of the AEDB. Retrieved from https://www.aedb.br/seget/arquivos/artigos06/784_Artigo%20Abc_Seget1.pdf.
- Moxham, C. (2009). Performance measurement: examining the applicability of the existing body of knowledge to nonprofit organizations. *International Journal of Operations & Production Management*, 29 (7), 740–763.
- Moxham, C. (2014). Understanding third sector performance measurement system design: a literature review. *International Journal of Productivity and Performance Management*, 63 (6), 704-726.
- Mukasa, S. (2002). Are expatriate staff necessary in international development NGOs? A case study of an international NGO in Uganda. Centre for Civil Society at London School of Economics.
- Nanavati, A. (2007). Performance Evaluation of Non-government Development Organizations: A Study in Vadodara, Gujarat. *Journal of Health Management*, 9(2), 275-299.
- Otley, D. T. (1994). Management competitive advantage: combining institutional and resource-based views. *Management Accounting Research*, 5, 289-299.

- _____. (1999). Performance management: a framework for management control systems research. *Management Accounting Research*, 10 (4), 363–382.
- Poole, D., Davis, J.K., Reisman, J. & Nelson, J.E. (2001). Improving the Quality of Outcome Evaluation Plans. *Nonprofit Management and Leadership*, 11 (1), 405–421.
- Quintairos, P.C.R., Silva, M.A.V.R., Costa, E.S. & Oliveira, E.A.A.Q.O. (2009). Aplicação do Balanced Scorecard a uma organização do terceiro setor. *Revista de Desenvolvimento Econômico*, 1 (2), 164-174.
- Ramadan, M. A. & Pilo, M. C. (2014). Investigating the Impact of Strategic Planning on Access to Funding Performance in Non-Governmental Organizations. *The International Journal of Business & Management*, 2 (11), 28-33.
- Ribeiro, E. N., & Camacho, R. R. (2008). Custeio ABC em entidades públicas: evidências de sua utilização em um centro municipal de educação infantil. *Enfoque Reflexão Contábil*, 27(1), 37-52.
- Richardson, R. J. (1999). *Pesquisa social*. 3ed. São Paulo: Atlas.
- Sabadin, A. L., Grunow, A. & Fernandes, F. C. (2005). INTEGRAÇÃO DO CUSTEIO ABC COM O MÉTODO UP: UM ESTUDO DE CASO. *Revista Universo Contábil*, 1 (3), 21-36.
- Sharma, P. (2012). *Performance Measurement in NGOs*. The Management Accountant.
- Spar, D. & Dail, J. (2002). Of Measurement and Mission: Accounting for Performance in Non-Governmental Organizations. *Chicago Journal of International Law*, 3 (1), 171-181.
- Teelken, C. (2008). The intricate implementation of performance measurement systems: Exploring developments in professional-service organisations in the Dutch non-profit sector. *International Review of Administrative Sciences*, 74 (4), 615-635.
- Thomson, D. (2010). Exploring the role of funders performance reporting mandates in nonprofit performance measurement. *Nonprofit and Voluntary Sector Quarterly*, 39 (4), 611-629.
- Wadongo, B. I. (2014). *Performance management and evaluation in non-profit organisations: an embedded mixed methods approach*. (unpublished doctoral dissertation). University of Bedfordshire, UK.
- Wadongo, B. & Abdel-Kader, M. (2014). Contingency theory, performance management and organizational effectiveness in the third sector: A theoretical framework. *International Journal of Productivity and Performance Management*, 63(6), 680-703.
- Waters, H., Abdallah, H. & Santillaán, D. (2001). Application of activity-based costing (ABC) for a Peruvian NGO healthcare provider. *International journal of health planning and management*, 16, 3-18.
- Waweru, N., & Spraakman, G. (2009). The appropriateness of performance measurement systems in the services sector: Case studies from the micro finance sector in Kenya, Paper presented at the meeting of the AAA 2010 Management Accounting Section (MAS).