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Management Support Model for Information Technology Outsourcing

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ABSTRACT

This study deals with the problem of outsourcing management, presenting a structure to support decision-making on effective information-technology outsourcing and highlighting the advantages and disadvantages that must be addressed. Since the study involves multiple variables, partially defined and conflicting objectives, and the will of decision-makers to broaden their understanding of the impact of decisions, the study used the multicriteria decision aid constructivist method to lead data collection and analysis. The chief results presented are: (i) a structured appraisal arranged by 8 strategic objectives and 107 performance indicators; (ii) the strengths and weaknesses of the status quo; and (iii) a process diagram for generating improvements. To ensure presentation of scientific and practical recognition in accordance with the constructivist path, the epistemological view adopted meets the scientific and practical requirements to ensure validity, legitimacy, and effectiveness of a model to support a decision-making process in a practical environment.

KEYWORDS

IT Outsourcing, IT Services, MCDA-C Method, Multicriteria, Performance Appraisal

INTRODUCTION

IT stands as one of the most fruitful areas for outsourcing by its operating nature and its history (Lacity & Willcocks, 2001; Lee, Huynh, Kwok, & Pi, 2003; Lacity, Khan, & Yan, 2016). The fact that it is a focus of analysis in several IT management models reflects the criticality of outsourcing (De Haes, Van Grembergen, & Debreceny, 2013; Sahibudin, Sharifi, & Ayat, 2008). Therefore, performance appraisal for IT outsourcing is of great interest to researchers and businesses (Ensslin, Mussi, Chaves, & Demetrio, 2015a, Lacity et al., 2016).

The interest in IT outsourcing has escalated mainly because IT has become more pervasive (Gorla, Somers, & Wong, 2010; Vodanovich, Sundaram, & Myers, 2010) with the digital transformation of business (Westerman, Bonnet, & McAfee, 2014). Alongside this rise in IT, an increasing preoccupation with external IT provisioning occurs in all business models that require integration, stability, and agility in a shifting organizational environment—features associated with IT quality (Ensslin et al., 2015).

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The wide presence of IT in an organization means that IT outsourcing can have an impact on many aspects of organizational performance and increase the risks inherent in certain types of IT provision.

Bearing in mind the complexity of IT in organizations, the effort required to maintain and update it, customers' reliance on innovation, and the interdependence of technology and organizational performance, many organizations have outsourced all or some of their IT functions. The improvement of service performance, cost reduction, user satisfaction, and a focus on core business competencies are among the reasons organizations opt for IT outsourcing (International Association of Outsourcing Professionals [IAOP] & Chittenden, 2010; Lacity & Willcocks, 2001; Lee et al., 2003).

However, what at first seems a highly attractive solution for meeting organizational goals comes with risks and challenges. Historically, results do not always confirm organizational expectations regarding IT outsourcing, and in some cases, they contradict expectations (Bahli & Rivard, 2005; Cullen, Seddon, & Willcocks, 2005). The considerable amount of reporting on the undesired consequences of IT outsourcing refers to the need for special care in planning, implementing, and maintaining it, handling each contract uniquely (Aubert, Houde, Patry, & Rivard, 2012; Gonzalez, Gasco, & Llopis, 2006). In this context, the question arises of how best to assess the benefits of IT outsourcing specific IT services.

Studies on IT outsourcing performance appraisal commonly focus on ex-post assessment (i.e., evaluating their effectiveness after outsourcing the service). Ex-ante evaluation studies are fewer and focus more on traditional cost-benefit analysis of outsourcing (Ensslin et al., 2015). In addition, studies deal with the assessment of IT outsourcing performance from perspectives that Roy (1993) characterizes as realistic, reflecting a lack of research in this field that uses the constructivist perspective (Ensslin et al., 2015). Therefore, the current study contributes an ex-ante assessment model focused on identifying the potential for outsourcing an IT service, and the use of a constructivist approach to performance evaluation.

Therefore, the purpose of this study is to provide a structured performance-appraisal model to determine the potential benefits to a company of outsourcing IT services. Some of the specific objectives are: i) an inventory of the decision-maker's strategic, tactical, and operational concerns with regard to the performance of IT outsourcing; ii) a hierarchical structure of value for those concerns; iii) ordinal scales (performance indicators) to measure the performance of operating criteria; iv) a criteria-based performance profile built from the constructed scales; v) identification of strong features and opportunities for improvement focused on increasing the company's potential outsourcing of IT services; vi) an illustration of how the model can generate improvement actions. Given the featured issues, the multicriteria decision-aid constructivist (MCDA-C) method is chosen for its appropriateness for constructivist analysis of complex and specific contexts (De Oliveira Lacerda, Ensslin, Ensslin, & Dutra, 2014; Marafon, Ensslin, De Oliveira Lacerda, & Ensslin, 2015; Silva da Rosa, Ensslin, Ensslin, & Lunkes, 2012).

The remainder of this paper comprises five sections. The following section sets out the theoretical references underlying the study. The second section contextualizes the research methodology. The third section presents the data analysis and the results. The fourth section provides a discussion. Finally, the fifth section lists conclusions and contributions.

LITERATURE REVIEW

IT Outsourcing Performance

Outsourcing has become the standard in many organizations worldwide (Lacity et al., 2016). IT outsourcing is the contractual provisioning of IT products (goods and/or services) to client organizations by an external organization (Cullen et al., 2005; Gottschalk & Solli-Sæther, 2005). IT outsourcing can also develop from an interorganizational relationship between client and supplier to provide IT services (Baker, Gibbon, & Murphy, 2002; Lee, Miranda, & Kim, 2004).

IT outsourcing is one of the common strategies widely sought to reduce organizational complexity and increase competitiveness. However, a considerable number of reports address the unwanted consequences for organizations that elect IT outsourcing (Ensslin et al., 2015; Schwarz, 2014), amplifying managers' fears of evaluating and defining what to outsource. The ability to appropriately adopt IT outsourcing and its effective management are a crucial asset for many organizations. In this context, IT outsourcing performance evaluation becomes relevant (Lacity, Khan, Yan, & Willcocks, 2010; Lacity, Solomon, Yan, & Willcocks, 2011; Lacity et al., 2016).

Studies in IT outsourcing performance evaluation occur from different perspectives and in different stages of the IT sourcing life cycle. These include research that seeks to explain the effects of various factors on IT outsourcing performance, as well as how these factors intertwine to generate expected outcomes. The effects on IT outsourcing performance of factors such as contractual and relational governance (e.g., Kim, Lee, Koo, & Nam, 2013; Narayanan & Narasimhan, 2014; Qi & Chau, 2012, 2013; Cetinkaya, Ergul, & Uysal, 2014), client-firm and provider-firm capabilities (e.g., Plugge, Bouwman, & Molina-Castillo, 2013; Willcocks & Griffiths 2010; Mani, Barua, & Whinston, 2010; Han, Lee, & Seo, 2008), and transaction attributes (e.g., Luo, Wang, Zheng, & Jayaraman, 2012, Gopal & Koka, 2010, Gulla & Gupta, 2012) have been widely researched. In addition, the effects of these factors are studied in multiple dimensions of IT outsourcing performance, including customer satisfaction, cost efficiency, and business-performance improvement (e.g., Gonzalez, Gasco, & Llopis, 2015; Schwarz, 2014; Han et al., 2008; Seddon, Cullen, & Willcocks, 2007; Kim et al., 2013).

The decision regarding outsourcing—the context for this study—is also a topic that studies of IT outsourcing performance address (e.g., Gulla & Gupta, 2012; Hanafizadeh & Ravasan, 2018). Lacity et al. (2010, 2011, 2016) undertook a broad review of the empirical literature to identify the determinants not only of the outcomes of IT outsourcing, but also of outsourcing decisions. The authors identify a set of independent variables that influence sourcing decisions, sorted into six categories: transaction attributes; client-firm characteristics; client-firm capabilities; provider-firm capabilities; sourcing motivations; and country characteristics. One of the reasons for high failure rates of IT outsourcing initiatives relates to inappropriate decisions (Lacity el al., 2016, Hanafizadeh & Ravasan, 2018).

Evaluation of IT outsourcing decision-making is complex (Lacity et al., 2016, Lee et al., 2003; Lin, Pervan, & McDermid, 2007). Barthelemy (2003) highlights the need for a multifaceted look at outsourcing, emphasizing precisely the failure of outsourcing work that should not be outsourced. A broad set of issues impacts the outcome of the IT outsourcing decision (Hanafizadeh & Ravasan, 2018). Many of these aspects are subjective and by their nature accommodate several analytical lenses (Gottschalk & Solli-Sæther, 2005; Lee et al., 2003). The solutions adopted by one organization do not necessarily fit another, or even the same organization in a different context and time (Goo, Huang, & Hart, 2008; Plugge, Bouwman, & Molina-Castillo, 2013). Some particularities of context, transaction, and outsourcing arrangements have unique characteristics (Baker et al., 2002). Outsourcing configurations also change as organizations themselves evolve, and these changes must figure in the analytical perspective, which implies more uncertainties (Cullen et al., 2005).

From the perspective of research, although studies have contributed to addressing some challenges of IT outsourcing performance evaluation, most make use of methods based on a realistic approach (Roy, 1993). Therefore, the contributions of the constructivist approach (Roy, 1993) seldom receive consideration in this field of study (Ensslin et al., 2015). From a practical perspective, client companies must develop competencies that support their ability to evaluate IT outsourcing decisions. (Lacity et al., 2016; Ensslin et al., 2015). Managers should seek ways to increase their knowledge about the context of the IT service, to better support their decisions about outsourcing (IAOP & Chittenden; 2010). The lack of performance evaluation mechanisms can cause managers to confuse projected benefits with realized ones, causing confirmatory bias on the part of the outsourcing project owner and a failure to consider results-based management by the user organization (Barthelemy, 2003).

Given the challenges of IT outsourcing performance, and the unique, complex, and dynamic process of IT outsourcing decision-making (Kang, Wu, Hong, & Park, 2012; Lacity, Khan, & Willcocks, 2009), this study uses the multicriteria performance evaluation lens of the constructivist approach as decision support in the context of IT outsourcing. From this perspective, performance evaluation is the process of building the decision-maker's knowledge regarding the specific context in which he or she proposes to evaluate performance, through activities that identify, organize, measure ordinally and cardinally, integrate, and enable visualization of the impact of actions and their management (Ensslin, Dutra, & Ensslin, 2000). This study operationalized the definition in the subject context using the MCDA-C method. Thus, this research addresses the gap in studies using the constructivist approach in the field of IT outsourcing performance and provides managers with an evaluation mechanism that supports their decision-making regarding IT outsourcing.

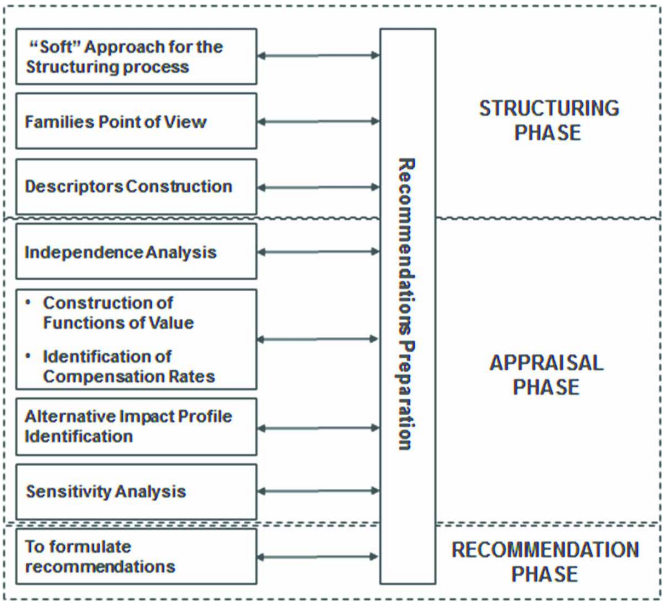
Multicriteria Decision Aid Constructivist Method

This study bases the use of the MCDA-C method on the fact that for some problems, constructivist approaches have greater potential for dealing with decision support, mainly because they consider the singularities of the context and the people involved (Della Bruna, Ensslin, & Ensslin, 2014; Roy, 1993). The high degree of subjective content present in IT outsourcing decisions, as well as the high level of complexity in its multiple derived criteria, reinforce this choice (Gottschalk & Solli-Sæther, 2005; Lee et al., 2003). As an alternative, the constructivist approach to the MCDA method provides support for decisions in complex contexts–subjective, conflicting, and uncertain contexts–and where the decision-makers want to improve their understanding of the situation to grasp the consequences of their choices.

The MCDA-C method emerged as a scientific tool in the 1980s and figured prominently in several cases, such as work by Bana e Costa (1992) and Landry (1995), highlighting the limits of objectivity in decision-making processes. Skinner (1986) and Keeney and Raiffa (1993) emphasize that a decision-making process must be specific to its context.

The MCDA-C method comprises three phases, as Figure 1 shows: (i) the structuring phase, (ii) the appraisal phase, and (iii) the recommendation phase (Ensslin et al., 2000).

Figure 1. Multicriteria decision-aid constructivist method phases. Adapted from Ensslin et al. (2000).



The arrows in the figure represent the MCDA-C method's ability to allow a two-way flow involving all the stages and steps, and the figure provides a summary of each phase, based on the following authors' works: De Oliveira Lacerda et al. (2014); Della Bruna et al. (2014); Dutra, Ripoll-Feliu, Fillol, Ensslin, and Ensslin (2015); Ensslin et al. (2000); Marafon et al. (2015); and Silva da Rosa et al. (2012). This study anticipated the structuring and recommendation phases of the model, and the authors omitted the evaluation phase to allow for a more detailed discussion of the structuring phase. The evaluation phase will be a subject for future research.

Structuring

According to Bana e Costa (1993), the stakeholders and their personal values, the rules and boundaries of the company context and its characteristics set the decision-making context. The delineation of the set of activities that fully represent the decision-maker's system of values and preferences is called "structuring." This phase is the most critical in terms of the process of decision support, as it seeks to understand the problem and the broad context (Bana e Costa, Ensslin, Cornêa, & Vansnick, 1999).

This structuring step also generates a description of the organization and allows the decision-makers to develop and expand their knowledge of the business context. In this model, the authors refer to the main concerns at this point as primary assessment elements (PAEs). Then, they build "concepts" linking the PAEs to actions. Subsequently, they cluster the concepts into areas of interest and draw up cognitive maps. The cognitive maps present information from the decision-makers' mental reference table about the problem and its characteristics (Ensslin, Neto, & Noronha, 2001). The analysis of the cognitive maps comprising structure and content characteristics enables identification of clusters that represent areas of concern, which will result in fundamental points of view (FPVs) (Eden, Ackermann, & Cropper,1992). The FPVs represent by quantity and types the dimensions the decision-maker deems relevant to assessing the context. The importance of FPVs becomes clear in the hierarchical structure of value (also known as a tree of value). The final stage is the construction of indicators (i.e., descriptors with ordinal scales for measurement) from which to select goals. Each scale has a positive and a negative pole.

Appraisal

The assessment phase aims at building an alternative evaluation model, consisting of the local preference scale for each FPV and the determination of compensation or substitution rates. In this phase, the researchers identify the impact profile of the actions as well as the overall evaluation (Ensslin et al., 2001). The assessment phase consists of building a process to determine the decision-makers' preferences among consequences, by comparing the alternatives according to value indexes (Simon, 1997). Using an interactive, iterative, and recursive approach and building knowledge make it possible to compare two actions in terms of preference and to support the choice, even with conflicting aspects found among different actors (Roy, 1993).

Recommendation

In the third and final stage, the researchers establish a process to understand advantages and disadvantages, and to create improvement actions in the decision-making context. The recommendation phase generates proper understanding for the decision-makers, so that they can comply with performance criteria judged essential and comprehensive for the given context. Thus, this phase shows strengths (excellent performance level) and issues with poor performance (low performance level). This knowledge allows the decision-makers to improve performance in those areas that they consider the most important.

In summary, as Ensslin et al. (2001) describe:

- The decision-makers are the stakeholders for whom the model is designed. The decision support model is constructed from their perception of context, characteristics, and priorities;

- The core objective is to expand the understanding of decision-makers and stakeholders to clarify which aspects (performance indicators) fully represent the features of the context, how they are measured, the reference levels, the goal for each indicator, and current performance;
- The results clarify the potential benefits of partial or full IT outsourcing.

RESEARCH METHODOLOGY

The constructivist perspective provides the basis for the epistemological assumptions that guided this research (Roy, 1993). The researchers associated the constructivist perspective with the foundations of design science (DS) research. Although DS research is not a dominant part of the research culture of information systems (IS), its adoption for this subject makes significant contributions (Peffers, Tuunanen, Rothenberger, & Chatterjee, 2007; Von Alan, March, Park, & Ram, 2004). Researchers have encouraged the development of more studies from the DS perspective in the IS area (March & Smith, 1995; Peffers et al., 2007; Von Alan et al., 2004).

The focus of DS research is on the knowledge, the understanding, and the support for solving organizational problems through the construction and application of innovative artifacts (Von Alan et al., 2004). These artifacts in the IS area may comprise models, methods, and instantiations (March & Smith, 1995; Von Alan et al., 2004). In this research, the resulting artifact is a support model for the decision to outsource IT and an instantiation of this model. While models are made from abstractions and representations that aid in understanding the problem and the solution, instances show that the model can be implemented in a work environment and enable the concrete assessment of the suitability of the model and its construction process for the desired objective (Von Alan et al., 2004).

In this study, the researchers-built artifacts for a significant organization in the services sector, in which the IT manager required a decision-making structure for IT outsourcing. For this research, the authors named this organization Valuable Decisions Company (VDC), due to a request for confidentiality. The researchers conducted open interviews through an interactive learning active inquiry and used a brainstorming technique with VDC's IT managerial board that included one manager (the decision-maker) and three IT coordinators, one from infrastructure, one from systems development, and one from IT governance. In addition, the researchers used records analysis and intensive direct observation (Lewis, Thornhill, & Saunders, 2007). Further, they had several iterations and interactions with the decision-maker to build the model, and to enable it to evolve and become calibrated within the organization's context and among its actors.

Like other research approaches, DS research is not free of principles and criteria that characterize and bring quality to it. While conducting this study, the researchers sought to address the seven DS research guidelines that Von Alan et al. (2004) defined: 1) design as an artifact; 2) problem relevance; 3) design evaluation; 4) research contributions; 5) research rigor; 6) design as a search; and 7) communication of research. As those authors report, these guidelines assist researchers, reviewers, editors, and readers in understanding the needs of effective DS research. In addition, the authors of this paper have also observed the framework that Peffers et al. (2007) proposed for the DS process.

By constructing the model and its instantiation, the researchers aimed to expand knowledge among the decision-makers in accordance with its goals, values, and preferences, as well as the business environment where the problem occurs. This is a principle that the MCDA-C method advocates in the construction of artifacts (see section Multi-Criteria Decision Aid-Constructivist Method). Therefore, the authors of this research understand design as both process and artifact, recognizing that the process corresponds to a set of activities developed in the production of the artifact (Von Alan et al., 2004). By considering the constructivist perspective (Roy, 1993), the authors did not intend to see the resulting artifact as a universal solution, but rather that the process of its construction expands the decision-maker's knowledge, and that the artifact is consistent with its goals, values, and preferences. Hence, it is both legitimate and useful, considering the singularity of the decision-making context of which it is part. From this perspective, this research aligns with the orientation of the DS research evaluation

process. This process predicts artifacts will be evaluated for their usefulness in solving the problem they address (March & Smith, 1995; Von Alan et al., 2004). The subsection Validity, Legitimacy, and Effectiveness Analysis evaluates these aspects of the developed artifact.

The authors reached the definition of the conceptual and theoretical background through the research literature on the assessment of IT outsourcing performance, using the ProKnow-C tool (Ensslin, Ensslin, Dutra, Nunes, & Reis, 2017; Silva da Rosa et al., 2012), which comprises the following databases: Scopus, Proquest, Informs Journal, Web of Science, Onefile, Ebsco, Wiley, Elsevier (Science Direct), Emerald, and Highwire.

DATA ANALYSIS AND RESULTS

This section describes the construction of a performance-appraisal model using the MCDA-C method, and includes:

- Contextualization (i.e., business-environment description, definition of roles, and definition of the problems analyzed and the overall context);
- The family group of FPVs (i.e., identification of the PAEs, construction of concepts, and creation of a family of FPVs);
- Descriptors (i.e., creation of cognitive maps, clusters, FPV value trees, and performance profile);
- Verification of the performance profile (i.e., strengths and weaknesses);
- Illustration of the recommendations phase with an improvement action plan.

Contextualization

The subject organization, VDC, provides Santa Catarina State, Brazil, with professional education and health services. It has more than 9,000 employees, with a network of over 450 business units in state and an annual budget (2015) of more than a US$250m. The performance of the organization in the service sector and its growth are the result of several factors, among them the strategic and operational use of IT. VDC's IT management structure is centrally controlled, and the "hub" is in charge of the delivery of IT services from strategy to operation, for all the business units in the organization.

The association of IT performance with VDC's performance became stronger with its strategic plan for 2015 to 2022. Some of the essential elements of IT support for the strategic objectives are the quality, availability, and constant improvement of information infrastructure and systems. To support the achievement of the organization's strategic objectives, VDC´s IT management board sees IT outsourcing services as a potential strategy that could substantially enhance IT performance; yet, it is hardly explored.

Role of Stakeholders

In the MCDA-C method, the stakeholders comprise, in a simplified manner, the decision-maker (i.e., involved directly in the decision-making process, and whose values and preferences prevail); the participants (i.e., those who can influence the decision-maker, who, in turn, strives to meet their needs); the facilitator (who helps the decision-maker in the identification, organization, measurement, and management of the relevant criteria, and is the one with proper knowledge of the MCDA-C method application); and, finally those stakeholders who may be affected directly and indirectly by the implementation of decisions that the model supports. In this research, the authors defined the stakeholders as:

- **Main Decision-Maker:** IT manager;
- **Participants:** Infrastructure, development, and governance coordinators;
- **Facilitators:** The authors of the research;

- **Affected Parties:** Other IT employees, internal and external users of IT services, and IT service providers.

The facilitator is an expert who works alone or leads a team, and who may be total stranger to the decision-maker, or a worker in another division of the company. His/her main role is interacting with the decision-maker and following the MCDA-C protocol to translate the decision-maker's behavior, concerns, values, and preferences into terms that he/she understands. Thus, the model does not represent reality, but the decision-makers' perception of reality (epistemological path).

The constructivist paradigm considers the model a representation accepted as useful by decision-makers, with the purpose of supporting their decision—that is, to develop their understanding with respect to a given decision-making context. Such a representation works as a tool that decision-makers consider suitable for organizing and justifying the development of convictions that enable monitoring and the generation of actions to improve the achievement of decision-makers' objectives, as well as serving purposes of communication (Ensslin et al., 2001; Roy, 1993).

The facilitator's work consists in explaining, justifying, clarifying, and recommending, but he/she must do this independent of his/her own value system. The facilitator may be tempted to go beyond this role and become a first-degree stakeholder, one who tries to change the problem according to his/her own value system and restrict the decision-maker's freedom. In this case, the model would lose objectivity and fail to reach the desired end. For the model to be effective, it is recommended that the facilitator have the attribute of honesty in conjunction with scientific abilities (Roy, 1993).

Issue Labeling

Labeling the issue sets the context to be appraised. In accordance with Ensslin et al. (2001), the label must describe the work under focus and the purpose to be reached. In this study, the authors chose the label "VDC´s Potential IT Outsourcing Services Appraisal." This label refers to an appraisal of VDC's IT needs, framed as IT services and based on utility, quality, timeliness, effectiveness, and guaranteed performance. For each IT service, the researchers had to compare VDC's need with what the market offers, to establish the level of attractiveness of adopting IT outsourcing.

An important aspect of decision-making is the workload and time required for modeling and execution of service contracts and procurement of goods, generally submitted to the market for bidding. In VDC, the timeframe between decision-making and the implementation of agreements varied from 4 to 18 months. Therefore, the outsourcing decision involved the analysis of various risks, such as supply, costs to avoid, and loss of business opportunities.

Family of Fundamental Points of View

After defining the context and stakeholders and labeling the issue, the next MCDA-C step is the definition of the family of FPVs. Counting on the committed involvement of stakeholders, the decision-maker must explain in detail a set of strategic objectives that align with company requirements, to evaluate all necessary services in terms of the attractiveness of the outsourcing (Ensslin et al., 2001). According to the MCDA-C process, the viewpoint structure comprises three steps: (i) Identification of the decision-maker's concerns (with stakeholders' support), called the PAEs; (ii) construction of a concept map that represents the underlying concerns of each PAE; (iii) use of the knowledge generated from identifying the PAEs and construction of concepts, performance of the setting of the FPVs, and test of the performance of its formation.

Identification of Primary Assessment Elements

The PAEs are the features decision-makers deem to have an impact on the achievement of their goals. The PAEs are the first preoccupations or motivations that decision-makers express when they appraise the focal situation (Keeney, 1992) and, according to Ensslin et al. (2001), they consist of objectives

and decision-makers' values, goals, actions, and alternatives. New PAEs may emerge with the iterative process of the MCDA-C method and through the combination of preexisting PAEs (Ensslin, Ensslin, Dutra, Longaray, & Dezem, 2018).

The number of PAEs is unlimited, and as many as possible should be identified—116 in this case. The researchers collected the PAEs in four sessions of about 50 minutes each, of brainstorming with the decision-maker (supported by the stakeholders). Noteworthy for this research was the fact that the decision-maker came up with new ideas (i.e., new knowledge) even at this early stage. Table 1 shows examples of the identified PAEs from the full list of 116.

Table 1. Examples of identified PAEs

Item	Primary Assessment Elements (PAEs)
01	Internal labor costs.
02	Management workload.
03	Quality of infrastructure.
04	Implementation costs.
05	Operating costs.
06	Internal staff experience with outsourcing management.
07	Agility in making changes.

Construction of Concepts

The concepts emerge from the PAEs. For each PAE, the facilitator invites the decision-maker and stakeholders to discuss its meaning and elicits preferences. The facilitator can then propose a two-ended scale with desirable action/results at one end and undesirable action/results at the other. The two poles are separated by three points in sequence between two square brackets such as these: […]. The decision-maker and other participants in the discussion must accept each concept.

According to Ensslin et al. (2001), each concept must be written in a way that encourages action. These concepts should refer to ideas associated with the strategic objectives, as well as actions that can support or assist in the achievement of these objectives.

For the 116 PAEs that the researchers set out in the previous stage, they constructed 107 concepts. The loss of nine PAEs occurred because during the process the decision-maker learned that some were repeated or very similar. As an example, Table 2 shows the list of concepts that the researchers constructed for the seven examples of PAE in Table 1.

The identification of the PAEs and the generation of concepts enabled the decision-maker to expand his/her understanding of the business context. Such understanding, together with the experience and understanding of the strategic issue, allowed the decision-maker, with the help of the facilitator, to reveal a complete hierarchical structure of the strategic goals and candidates for inclusion in the family of FPVs.

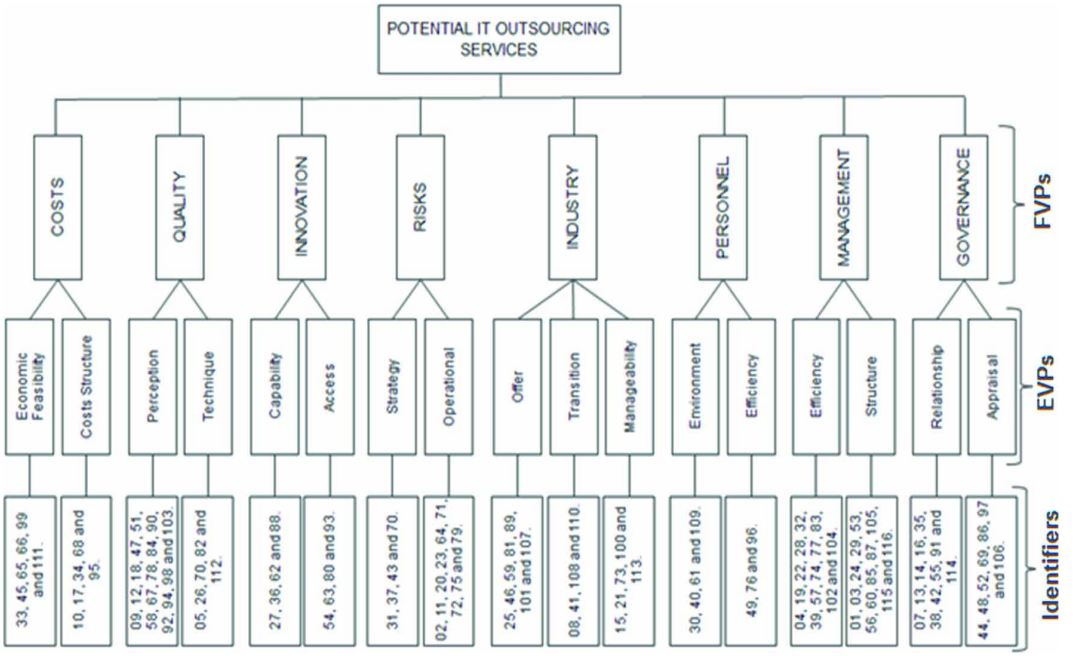
Construction of the Family of Fundamental Points of View

The FPVs express the decision-maker's values and set the features of the potential actions. These must be tested for their essentiality and their comprehensiveness. The researchers carried out this activity with the support of the 107 concepts, testing each concept for its content and its concerns. Figure 2 shows the FPVs and the elementary points of view (EPVs), which are subsets of the FPVs (Ensslin et al., 2001).

Table 2. Examples of resulting concepts

Item	PAE	PAE Definitions
01	Internal labour costs.	Reduce financial cost of internal labor [...] to have internal labor with high costs.
02	Management workload.	Reduce management workload [...] to have managerial overheads and high management cost.
03	Quality of infrastructure.	Expand the quality of the IT infrastructure [...] to have IT infrastructure with many flaws.
04	Implementation costs.	Reduce financial implementation costs [...] to have high implementation costs.
05	Operating costs.	Reduce financial operating costs [...] to have high operating costs.
06	Internal staff experience with outsourcing management.	To have experience in outsourced management [...] to not know how to manage other companies.
07	Agility in making changes.	Improve agility in making changes [...] be slow to make changes.

Figure 2. Fundamental points of view, elementary points of view, and identifiers



The preparation of the fundamental viewpoints developed from recommendations by Ensslin et al. (2001). According to these authors, each FPV should be: i) essential (i.e., it must consider key aspects); ii) controllable, so that it can develop improvement actions; iii) complete, including all the fundamental aspects in the eyes of the decision-maker; iv) measurable, allowing performance measurement of potential actions; v) functional, so that information can be collected in a practical way; vi) isolatable (i.e., able to be analysed independent of others); vii) unique and not redundant or duplicated; viii) concise, including only essential aspects and not adding to the range of FPVs; and ix) comprehensible, so that the decision-maker and other parties involved in the development and use of the model have a clear understanding of their meaning.

Once the FPVs are defined, the next stage is to construct descriptors by creating cognitive maps, focusing on the identification of EPVs.

Construction of Descriptors

One of the critical elements in a performance-appraisal template is the measurement of the model features that represent the strategic objectives of the actual organization. This is the role of the descriptors in the MCDA-C method. According to Ensslin et al. (2001), the descriptors are a way of representing the measurement of these features associated with the EPVs. According to the authors, this stage defines what is most appropriate to measure and then proposes scales for its measurement (De Oliveira Lacerda et al., 2014; Longaray & Ensslin, 2015; Marafon et al., 2015).

In the MCDA-C method, the construction of descriptors consists of five steps: (i) construction of cognitive maps; (ii) cluster and subcluster grouping; (iii) creation of the hierarchy of values with the EPVs and the construction of descriptors; (iv) establishment of reference levels; and (v) creation of a performance profile—that is, measuring the current performance (status quo).

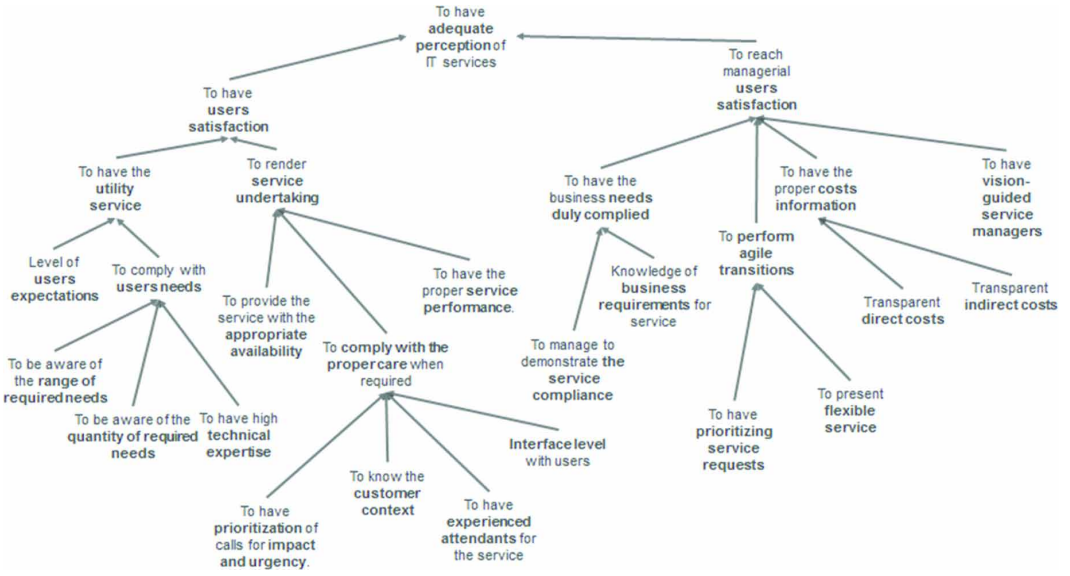
This research includes the following as examples: a cognitive map, a cluster and subcluster map, part of the value tree with EPVs, some descriptors with the scales, and the performance profile for one fundamental viewpoint.

Cognitive Maps

A cognitive map shows relationships between concepts. These relations reveal cause and effect, implying the existence of a hierarchy of influence between the concepts. Analysing this hierarchy enables the generation of knowledge for the decision-maker and for the MCDA-C method (Ensslin et al., 2001). The construction of cognitive maps allows the decision-makers to clarify their values and preferences associated with the specific problem. It also helps them focus on actions that may promote achieving their desired ends (Ensslin et al., 2001; Montibeller, Belton, Ackermann, & Ensslin, 2008).

In this study, Figure 3 illustrates the cognitive map for the EPV of "perception," whose FPV is "quality." To better illustrate this, the researchers have simplified each concept to its positive (desired) pole.

Figure 3. Cognitive map for the elementary point of view "perception"



Analyzing the relationships that the cognitive map in Figure 3 presents make it possible to identify the paths between means and ends.

Formation of Clusters

Cognitive maps feature many related concepts and therefore a huge amount of information and complexity. One of the ways to reduce this complexity and compact the cognitive map information is the cluster (Belton, Ackermann, & Shepherd, 1997). A cluster is a set of concepts that are highly interconnected with a minimum of external connections. The identification of clusters relates to the idea that the connections between concepts of the same cluster are stronger than extracluster connections (Ensslin et al., 2001). According to Eden et al. (1992), the set of concepts that form a cluster defines an area of interest related to the problem. Thus, the identification of clusters reveals aspects that the decision-maker considers important. Eden and Ackermann (1998) state that the clusters formed in this type of analysis, as well as the interrelationships between them, will likely form a sort of summary map indicating the problem's areas of interest. Therefore, the use of the cluster will reduce the complexity of the map and facilitate the understanding of the facilitator and the decision-makers. This work is part of multicriteria decision-making using an additive aggregation model. Following the protocol for the construction of a multicriteria model of support for decision-making, and as a way of continuing the process, it begins by building a tree of points of view (Bana e Costa, 1992). The process of gathering points of view and determining the points of view to consider are two important activities in the structuring process of the problem, since from this arborescent structure it will be possible to evaluate potential actions (Ensslin et al., 2001).

However, the process of building the tree of points of views is not trivial. Bana e Costa (1992) argues that the construction of a tree of points of views is a task highly dependent on the facilitator's ability to determine the tree structure, since this structure is not unique. Building the cognitive map generates a large amount of information about the problem to decision-makers. This characteristic of cognitive maps can be very useful in the construction of points of view, since from this map it is possible to determine the actors' goals and the characteristics of the actions that decision-makers should consider in the process of evaluating actions (Bana e Costa, 1992). However, the transition from maps to the tree is dependent on the facilitator's ability (Belton et al., 1997).

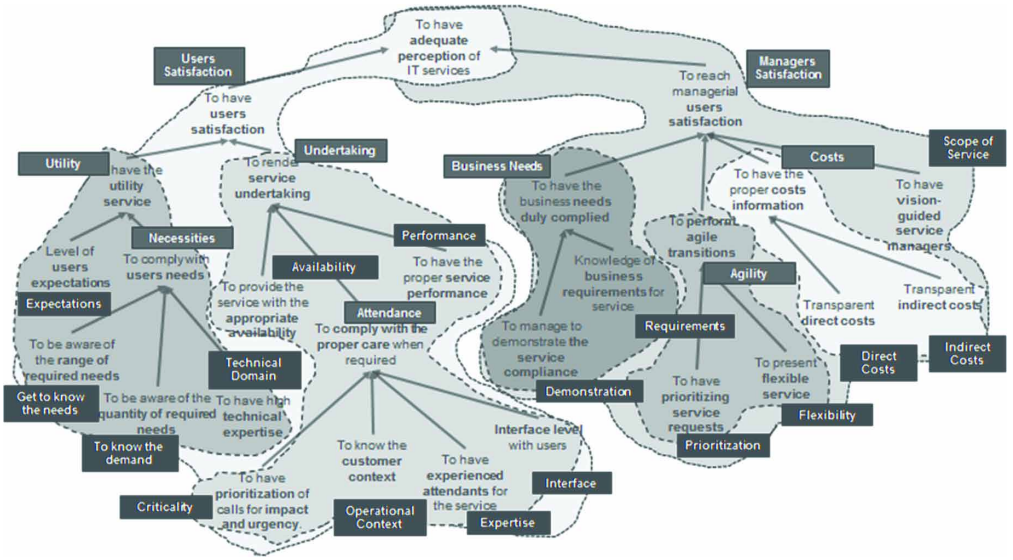
The cluster structure compacts the cognitive map information and identifies areas of interest; thus, it can be considered a summary map. According to Eden and Ackermann (1998), each cluster corresponds to an area of interest; in the transition to the tree of points of views, it corresponds to the candidate's FPVs. Next, each cluster is divided further into subclusters that in the tree of points of views will correspond to the elementary points of view. Figure 4 presents the cognitive map clusters for the EPV of "perception" and the FPV of "quality" identified in Figure 3. For this step, it is essential to develop a content analysis that considers the ideas behind the concepts (Montibeller et al., 2008).

The process of elaborating the tree of points of view when structuring a problem by points of view, as well as the determination of the points of view considered fundamental, are two activities of special importance in the structuring process of the problem, since this tree structure will enable the evaluation of the set of potential actions (Ensslin et al., 2001). Upon concluding the structuring phase, it is possible to determine the impact of each potential action on each fundamental point of view, generating the impact profile of each action. In most cases, this information is useful in choosing the most attractive among conflicting actions. When this is not the case, the ordinal scales are transformed into cardinal scales (interval value functions), and the compensation rates between criteria are determined, and then the overall (global) value of each action is calculated (Bana e Costa, 1992). This research does not cover this step.

Figure 4 presents the cognitive map clusters for the EPV of "perception" and the FPV of "quality" identified in Figure 3.

The groupings of clusters form explanatory concerns, and not cause-effect relationships. From here, a hierarchical value structure emerges.

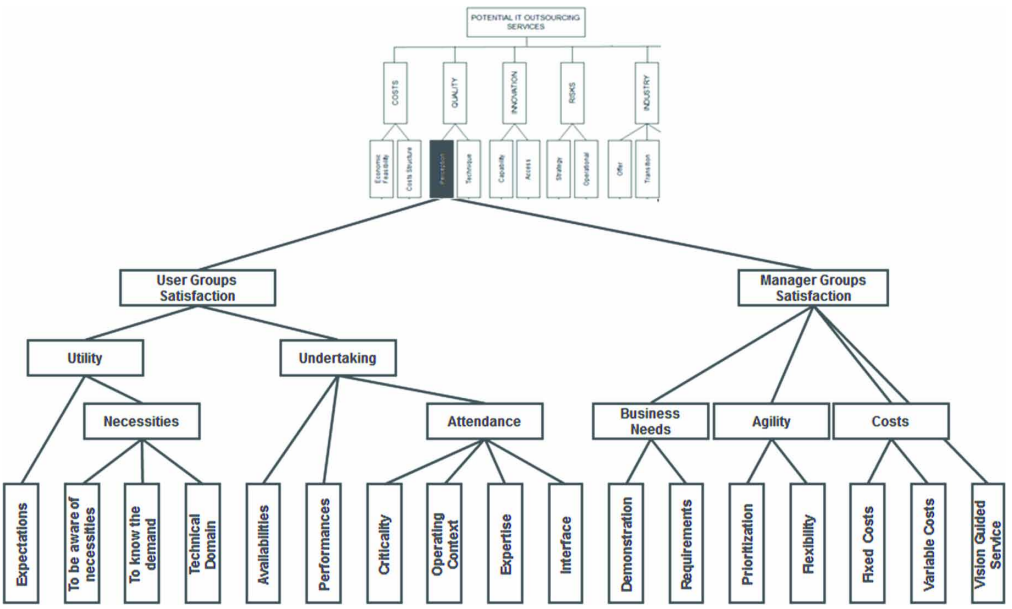
Figure 4. Clusters on cognitive map of elementary point of view "perception" from Figure 3



Hierarchical Value Structure

Each FPV is broken down until it reaches an EPV or elementary subpoint of view (ESPV) that represents a measurable feature. Figure 5 provides examples of ESPVs generated from the EPV "perception" and the FPV "quality." In the decision-maker's judgement, the breaking down of each EPV into its explanatory factors gives a highly specific view, which exhaustively represents what must be considered for the management of FPVs.

Figure 5. Elementary subpoint of view of elementary point of view "perception"



The next step is to present the descriptors and give a more detailed view, so that the scales can specify what will be measured and how.

Descriptors

The descriptors are scales of measurement and must comply with the theoretical foundations of the theory of measurement (Micheli & Mari, 2014). Micheli and Mari (2014) summarize the required criteria as objectivity and operability. Operability of scales means that statistical operations carried out on the established scale comply with the restrictions laid out during its construction. These operations are as follows: counting, frequency, mode, and medium. As for objectivity of scales, Keeney (1992) recommended that the descriptor be essential, controllable, complete, measurable, operational, homogeneous, isolatable, nonredundant, concise, and comprehensible. Some of these are also characteristics of the FPVs.

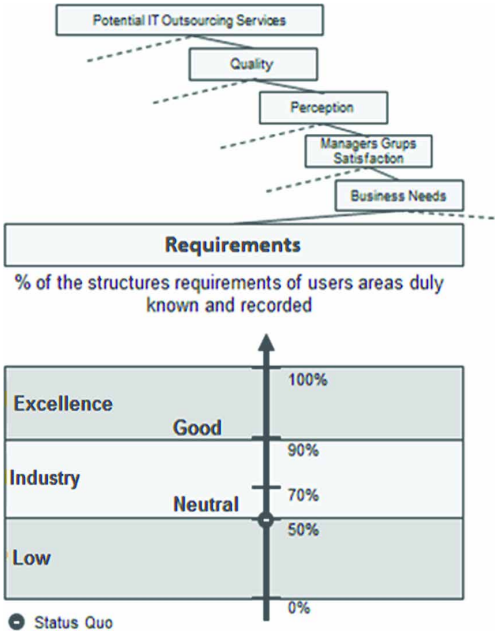
The decision-maker must participate in building the descriptors. Ensslin et al. (2001) recommend that since the created scales should represent the decision-maker's mindset, facilitators should work interactively with the decision-maker. Once the scale that best represents the decision-maker's scale is created, judgments around their preferences must be incorporated to establish the reference levels. The reference levels are set to define the range of possible performance levels, which in this case include "excellence" (outperforms the market), "industry" (market standard), and "low" (poor performance). Alternatively, Bana e Costa et al. (1999) propose the titles "good" and "neutral" for these levels.

Following completion of descriptor construction, the practical application with ordinal scales of the model can occur—in this case, by providing support to determine the outsourcing potential of an IT service, as the next section explains.

Performance Profile: Practical Application

The final stage of the model for VDC´s potential IT outsourcing services appraisal consists of delineating the performance profile, based on the current situation or status quo (SQ) for each descriptor. Figure 6 illustrates the SQ for the ESPVs.

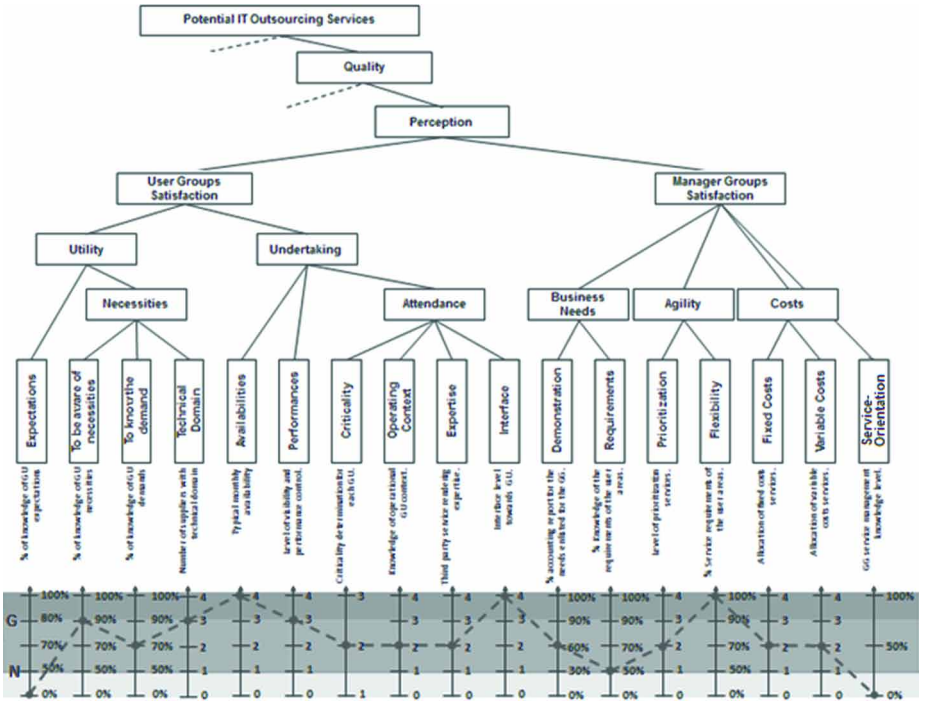
Figure 6. Descriptors and performance of elementary point of view "perception"



The researchers performed the same procedure for all the model descriptors, as Figure 7 shows. The company's local area network (LAN) was the IT service selected for appraisal.

Figure 7 presents the performance of each of the criteria that the researchers evaluated for the EPV "perception" and associated with ESPVs "availability," "interface," and "flexibility," judged

Figure 7. Descriptors and performance of elementary point of view "perception" for fundamental point of view "quality"



most fitting for the IT service under analysis (the LAN). Since usual monthly availability of this IT service is 100%, it requires no interface with user groups and has the flexibility to suit all areas of the organization. On the other hand, the criteria associated with the descriptors "expectations" and "service-orientation," graded at the lowest value on the scales, highlight opportunities for improvement that could contribute to increasing outsourcing potential. The criteria associated with ESPV "requirements," despite falling on the border between low and industry-standard, could also enhance outsourcing potential if actions were taken to improve the level. Other criteria that fall below the upper assessment threshold, especially those associated with internal company factors (such as the criteria associated with the ESPV "operations"), could be improved with in-house actions such as business-process mapping. These may not be considered a priority, depending on the availability of resources and other business strategic priorities.

The overview of performance identifies the ESPVs "availability," "interface," and "flexibility" as the competitive advantages of VDC´s SQ. On the other hand, "expectations," and "service-orientation" are the aspects that fall into the bottom tier and therefore require improvement actions. Each improvement action must contain: (i) the descriptor with the SQ performance; (ii) the action; (iii) the expected results; (iv) the required results; (v) who is responsible; (vi) commencement date; (vii) termination date; (viii) the follow-up frequency; and (ix) who follows up and how, as Table 3 shows for the EPV "perception" and the ESPV "requirements."

Table 3. Improvement action for the elementary point of view "perception" and for the elementary subpoint of view "requirements"

Descriptor	Action
Target: 90%	Modeling and implementation of identification process and management of IT requirements for each business niche
Expected result	Increase the portion of documented requirements from the current 50% to 90% for the IT service
Required resources	Business analysts and a process manager responsible for the process to be modeled
Responsible person	IT infrastructure coordinator
Commencement date	March 4, 2016
Termination date	Ongoing action
Follow-up frequency	Biweekly
How to follow up	Percentage of user areas with mapped and controlled requirements
Responsible for the follow up	IT manager

In order to achieve the action plan, the impact on performance indicators and the overall appraisal, as well as the upgrade of performance for each indicator, must be subject to a management process with continuous appraisal cycles focused on results.

DISCUSSION

This discussion concerns the results of the research against the theoretical background, and the contributions that the model developed for VDC´s potential IT outsourcing services appraisal makes to supporting decision-making. Table 4 compares the results with the theoretical background.

Table 4 shows that this study followed in the footsteps of existing published studies by building a system for effective organizational-performance appraisal. The choice of the MCDA-C method is justified because it: (i) enables simultaneous assessment of actions on a set of criteria (multicriteria)

Table 4. A comparison between existing literature and the research results

Authors	Performance Appraisal Process	Research Results
Bana e Costa et al., 1999 Ensslin et al., 2001 Ensslin et al., 2018. Kaplan & Norton, 1996	Engendering, construction, and dissemination of knowledge.	Developed a detailed study of an organization with a focus on IT outsourcing, creating knowledge of the area and triggering opportunities.
Bana e Costa et al., 1999 Ensslin, Dutra, & Ensslin, 2000 Franco-Santos et al., 2007 Kaplan & Norton, 1996	Identification of necessary and sufficient subjects to measure and manage organizational performance.	Relevant actions identified to determine the potential for IT outsourcing, creating knowledge of the area and providing opportunities.
Bana e Costa et al., 1999 De Oliveira Lacerda et al., 2014 Ensslin et al., 2000 Ensslin et al., 2001	Enabling decision support.	The model was developed using the MCDA-C method, whose primary objective is to support the decision-maker.
Ensslin et al., 2017 Kaplan & Norton, 1996	Process management.	The research enabled the study and analysis of the management of IT outsourcing services, featuring a management process focused on performance appraisal.

(Bana e Costa, 1999); (ii) enables the decision-maker and other stakeholders to gain knowledge in support of decision-making (Bana e Costa, 1999); (iii) provides the decision-maker with tools to support the decision-making process—a process that usually involves conflicting criteria; (iv) allows the adoption of multiple analyses, again often conflicting (Bana e Costa, 1993); (v) allows generation of knowledge for the decision-maker by adopting tools that use his/her values and preferences (Bana e Costa, 1993); (vi) creates a model that bases decisions on what is most appropriate to the specific situation (Roy, 1993).

The model contributes to the decision-making process within the surveyed organization by bringing consistency to the criteria and the evaluation process, which ensures transparency and enables making solid decisions. As a customized template linked to the decision-maker's values and preferences, it is intended to create better results while being appropriate to the organization's practice and culture.

Validity, Legitimacy, and Effectiveness Analysis

This section deals with the validation and legitimization of the model, and its contribution to the decision-aiding contexts in which it was developed. The problem of evaluating validation, legitimacy, and effectiveness ("doing the right things") resurfaces from time to time; even so, it largely has been neglected or ignored in the modeling literature (Checkland, 1995; Déry, Landry, & Banville, 1993; Landry, Banville, & Oral, 1996; Oral & Kettani, 1993; Roy, 1993).

The environment in which modeling problems occur may be defined from a scientific perspective or a practical perspective. These perspectives create a debate between the "scientist" and the "practitioner" in the science of modeling, in which the former accuses the latter of being incompetent, but in turn is criticized for being increasingly alienated from real-world problems, inflating its mathematical component, and sacrificing the practical characteristics of the problem (Oral & Kettani, 1993; Roy, 1993; Roy, 1994; Yewlett, 1984). Validation should occur in accordance with the ontological or epistemological view adopted and comply with the scientific perspective as well as the practical perspective (Ensslin et al., 2017; Landry, 1995; Roy, 1993).

Aiming at scientific acceptance and giving meaning and credibility to the results produced in the process of modeling in decision-aiding contexts, researchers have followed three main ontological or epistemological paths: the path of realism, the axiomatic path, and the constructivist path (Roy, 1993). Each of these paths follows a very well-defined vision of the problem and generates different solutions. The path of realism searches for descriptions for discovering; the axiomatic path for norms for prescribing; and the constructivist path for working hypotheses for recommending. Following the path of realism is adopting an ontological position that seems unacceptable, so in decision-aiding contexts this path is used in conjunction with the axiomatic path (Ensslin et al., 2001; Roy,1993).

As in the case of this research, the constructivist path follows the epistemological path and consists in developing a protocol in a given order: concepts; graphical, mathematical, and descriptive representations; procedures; and results capable of expanding understanding of the consequences of the decision context for the decision-makers' goals and system of values and preferences (Bana e Costa, 1992; 1993; Bana e Costa et al., 1999; De Oliveira Lacerda, Ensslin, & Ensslin, 2011a; Ensslin et al., 2000; Ensslin et al., 2018; Roy, 1993).

In the constructivist path, what can researchers do to validate the work they have produced? This is a matter that goes well beyond the scope of this paper and is considered only under the minimal conditions presented by Roy (1993). A valid decision-aiding model must have: i) a well-defined procedure protocol which is scientifically recognized as appropriate; ii) a protocol with all its parts operationalized, evaluated, and accepted individually and collectively by a large scientific community interested in them and attesting to its appropriateness; iii) a decision-maker whom the model is meant to aid, who should recognize that the tool (decision-aiding model) helped him/her to acquire the knowledge to understand the consequences of the context for his/her goals, values, and preferences,

in order to manage in a conscious and informed way. The first two parts are usually called validation, the third legitimation (Roy, 1993).

Figure 1, MCDA-C phases, shows the MCDA-C protocol this study used, the same protocol used in hundreds of international publications—so the global protocol answers the first requirement for validation (Bana e Costa, 1992; Bana e Costa et al., 1999; De Oliveira Lacerda, Ensslin, Krueger, & Ensslin, 2017; De Oliveira Lacerda et al., 2014; Ensslin, Ensslin, Back, & De Oliveira Lacerda, 2013; Ensslin et al., 2015a; Ensslin et al., 2018; Longaray, Ensslin, Ensslin, & Da Rosa, 2015; Marafon et al., 2015; Montibeller et al., 2008).

Oral and Kettani (1993) defined the second protocol concerning operationalization as the conceptual validation, referring to the source of the mental data used to construct the model. The process used to build the model must capture the essentials of the managerial situation as perceived by the relevant actors. The knowledge developed depends on the process and on the facilitator's skills, as well as the decision-makers' perceptions (Roy, 1993). Therefore, the validation of the model basically concerns the appropriateness of the process of obtaining and using mental data (Bana e Costa, 1993; Ensslin et al., 2017; Oral & Kettani, 1993; Roy, 1993;). This includes issues such as: (i) the identification of stakeholders, mainly the decision-maker; (ii) the process of becoming aware and establishing the limits of managerial context; and (iii) the technique chosen to build the model—in this case the MCDA-C method with the methods of aggregation to a single synthesis criterion (Bana e Costa, 1992; Ensslin, Ensslin, Matos, Dutra, & Ripoll-Feliu, 2015b; Ensslin et al., 2018). The identification of stakeholders and the description and delimitation of the problems are justified since the modeling is participative and requires credibility and consistency, along with actors and institutional commitment to its implementation (Landry, 1995; Longaray & Ensslin, 2015; Roy, 1993). The implementation of the MCDA-C protocol, as Figure 1 presents it, is divided into structuring, evaluation, and recommendations, and is described in the section Data Analysis and Results. The scientific community does the validation of the implementation of the MCDA-C protocol and all the network of tools (most of them imported from other fields), a result of the revision by the referees and the scientific community, and the citation of the research (De Oliveira Lacerda et al., 2011a; De Oliveira Lacerda, Ensslin, & Ensslin, 2011b).

The third requirement, which is called effectiveness (doing the right things), is mainly concerned with the degree or capacity of the formal model to describe and represent correctly and accurately the context as the decision-maker perceives it. It is developed by verifying the process of interaction between the facilitator and the decision-maker, to help the decision-maker to acquire the knowledge to understand the consequences of the context for his/her goals, values, and preferences, and promote management in a conscious and informed (enlightened) way (De Oliveira Lacerda et al., 2011a; Ensslin et al., 2000; Ensslin et al., 2015a). This research is an illustration of the MCDA-C method in a specific context, and thus requires the full participation and commitment of the decision-maker and of the other stakeholders directly involved in the area. Thus, the development and implementation of the MCDA-C instrument should be recognized as part of a consensual change and, hence, impact on the organizational context. These kinds of problems are unique and complex in nature. Also, they have many variables that are not well defined, and deal with managerial contexts that are vast in scope, involving multiple actors with conflicts of interest, objectives, values, and preferences. This kind of problem, unlike counterparts in the physical and natural sciences, is observer dependent once the model has been constructed, in accordance with the decision-maker's perception of reality. The purpose of the generic model is to represent reality with naive or impoverished references to managerial reality and decision-maker objectives, values, and preferences. In a practical managerial context, those in charge of solving concrete problems and demanding decision-aiding models are thus inevitably disappointed by the gap between their own expectations and this kind of result. This is the main difference between the quantitative (realist path) study, which seeks to find a generalizable explanation for a certain phenomenon, and the constructivist path, which the authors used in this research (De Oliveira Lacerda et al., 2014; Ensslin et al., 2018; Landry, 1995). For these kinds of

problems, the MCDA-C protocol needs very severe observation, first related to the process used to interact with the actors, mainly by the decision-maker (Ensslin et al., 2001). The MCDA-C uses the interactive learning active inquiry (ILAI) in all interactions to create an environment in which the actors feel safe about revealing the information and their most serious feelings of anxiety concerning the environmental context. In this research, this concern was addressed by continually sharing the knowledge developed with the decision-makers and the stakeholders, and by creating an environment of dialogue and exchange of perceptions of the evolution of the model (Ensslin et al., 2018). The ILAI is a learning process used by the MCDA-C when interviewing and seeking to expand stakeholders' knowledge, information, or truth through interactive-inquiry questioning. The facilitator assists in the process. The ILAI implies following the MCDA-C protocol and possessing skills and attitudes that allow the facilitator to use the learning, leading him/her to understand new aspects and ask questions about new consequences and issues, while gaining new information (knowledge).

Final considerations about the validity, legitimacy, and effectiveness of the process used to develop and implement the model include the grounding of validity in the theoretical foundation published in Ensslin et al.'s (2015a) work; the basis of its legitimacy in the decision-maker's using the model to guide the strategic planning for the IT area in VDC; and the proof of its effectiveness in the use of the model to manage and improve the IT outsourcing. Thus, all the scientific requirements to assure validity, legitimation, and effectiveness as proposed by Roy (1993) have been addressed successfully, and all the scientific requirements to ensure validity, legitimation, and effectiveness as proposed by Roy (1993) have been met successfully.

CONCLUSION AND CONTRIBUTIONS

IT permeates all activities of organizations at all levels. Its management is complex, expensive, and diverse, and this has encouraged companies to outsource part or all their IT services. When considering partial IT outsourcing, managers often clash over the difficult selection of which parts of the service are most appropriate for outsourcing (Gorla, Somers, & Wong, 2010; Westerman, Bonnet, & McAfee, 2014). In that context, this study aims to structure a multicriteria template to determine the potential contribution that IT outsourcing could generate for a company. The target was achieved, and this is partially illustrated in Figures 5, 6, and 7. The model was created, composed of eight strategic objectives called fundamental viewpoints (FPVs), and 17 sub-elements (i.e., the EPVs) that represent the decision-maker's personal values. Finally, 107 performance indicators called descriptors express the values that each EPV represents.

The model was based on information obtained from unstructured interviews with the decision-maker, adopting the DS research approach. The MCDA-C method was used, and the involvement of the decision-maker and stakeholders established the constituent aspects of the model, and later built the scales for measuring these aspects. The value judgments of the decision-maker were elicited to establish a scale of reference levels. The decision-maker and stakeholders individually and collectively legitimized each activity. As a result, it was possible to identify the current performance profile of each element of the company's IT, based on the decision-maker's views. The profile showed the priorities, how they were measured, and the level of performance of IT in the business. Figure 7 illustrates one component (the LAN). From this information, it was possible to identify the ESPVs of "availability," "interface," and "flexibility" as areas of competitive advantage in the company's current performance. The ESPVs "expectation" and "service-orientation" were the aspects that compromised performance and therefore required improvement actions, which were also identified. Table 1 illustrates one of these actions.

The use of the theoretical lens of performance evaluation in the constructivist view as a support for the decision on IT outsourcing is a theoretical contribution of the research because most of the existing studies follow a realistic lens for the treatment of this issue. In addition, a value-focused perspective was used for a specific context and decision-maker, unlike traditional approaches that

focus on alternative thinking. The identification of value enables use of best practices to continue in an organization, but considers their respective singularities (i.e., their competitive advantages) as well.

As for practical implications, the developed model allows the organization to perform the evaluation of its IT services outsourcing as contribution to the organization. This evaluation enables the decision-maker to define assertive strategies and actions to improve results in IT services for the company. The knowledge the decision-maker develops contributes to the organization's approach to the subject and facilitates communication with other stakeholders in the organization, and with potential suppliers. In addition, the model can be described as management technology, capable of promoting systematic innovation to improve the conditions for IT outsourcing services to add value, by exposing the organization's needs, minimizing the prescription of solutions, and thereby expanding the possibilities of solutions for a given need. Other organizations can apply the development process of the model the authors used in this study, while respecting their singularities.

The need for iteration and interaction with the decision-maker, who naturally was very busy, did put some constraints on the development of this study. Meetings had to be limited to just 60 minutes. The number of sessions was increased to get around this problem. The second limitation was the need for clarification of how technical issues were seen from a tactical and strategic perspective by the decision-maker. To minimize this problem, the facilitators conducted discussions about the impacts of technical issues on business needs.

One of the critical points the researchers identified is the way IT is structured in the organization in terms of analysis. Many forms (or lenses) could be applied—the lens of the type of technology, for example, the processes supported by technology, or the services provided for IT users. A potential gap could be the focus of future research. Another limitation is that it is not possible to look at all possible combinations within the organization's activities since the process operates only for those with the greatest contribution potential. Further studies in other organizations are recommended to compare with these results and to throw new light on the subject.

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