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Strategic Behavior Categorization in Information Technology Outsourcing: An Analysis Based on Knowledge Transfer and Relational Governance

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Abstract: This paper proposes a strategic behavior categorization between the contractor and the provider in information technology (IT) outsourcing. We identified four behaviors (or attitudes) focusing specifically on the contractors' attitudes: (a) conservative, (b) collaborative, (c) opportunistic, and (d) transformational. Theoretical concepts from IT Outsourcing, Relational Governance, and Knowledge Transfer were used to derive the study hypotheses. A questionnaire was developed to collect the information to test the hypotheses. An empirical analysis of a sample of 247 Brazilian companies was used, supporting the grouping of the companies as follows: 38.49% of them had the conservative attitude; 29.14% of them had the collaborative attitude; 14.97% of them had the opportunistic attitude; and 17.40% of them had the transformational attitude. We found that the relational attitudes should be adjusted to the individual contractors' conditions, specific characteristics, and sectors. Our results also emphasize that the type of outsourced activity (traditional or customized) enables the managers to identify the need to balance the participation in relational governance. This study brings innovations to the understanding of the importance of the relationship between the contractor and the supplier, supporting, for example, the prioritization of new relational profiles according to the level of the IT service that was contracted, whether it is traditional or customized.

Keywords: information technology; outsourcing; relational governance; knowledge transfer; strategic behavior categorization



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1. Introduction

Information technology outsourcing (ITO) is a highlighted strategy for the IT sector, incrementing new knowledge and promoting cultural aggregations for organizations [1–3]. It enables companies to transfer knowledge and expand their ability to develop services or products. Outsourcing the obligation of creating or supplying the technological solution that is critical to the business enables the contractors to take more efforts into the core and more profitable activities of the company [4–7], reduces uncertainty and provides cost savings [8], enables the use of resources for other activities, and reduces the amount of risk with the acquirement of the ability and expertise of the supplier who holds the benefits of the economies of scale and scope [9–11].

Nevertheless, ITO difficulties that are related to the contractors' attitudes can be observed in many business arrangements, especially those concerning the capacity of relational governance regarding IT services [12]. Outsourcing is a complex system of relationships and interactions between the contractor and supplier, and its systemic architecture

and internal dynamics need to be well understood to ensure long-term rationality in the related decision-making process [13]. This complexity partly lies in the difficulty that most IT contractors have with the commitment and coordination of their services [14,15].

IT services are fundamental for an organizations' survival and business success [16,17]. They are also an important tool that is used to support the communications that are related to the internal processes, which could influence the transfer and dissemination of new knowledge [18,19]. However, organizations that lack the vision and resources that are necessary for all levels of IT activity may be unable to justify the fixed costs of maintaining an in-house IT department. Because of these challenges, ITO is a business strategy that can improve the internal capacity of a business and the decisions that are made when it is combined with other operational and management methodologies [20,21].

Outsourced IT services can provide a level of knowledge transfer for contracting companies, and they might need to develop a different attitude for each type of IT project. Therefore, the contractor participates actively or passively in ITO. Thus, previous studies have led to several models and theories about the outsourcing relationship. The exchange relationship, trust, and knowledge sharing parts are critical success factors influencing the integration process in outsourcing [22–24]. In this context, knowledge management can be helpful in client–vendor relationships [25] and outsourcing relationship integration management [26].

In ITO relationships, the critical success factors influence the maintenance of the contracting services and the development of partnerships, with mutual trust between the parties being strengthened [27]. In addition, it helps to understand the differences between what the outsourcing parties believe to be relevant for maintaining their relationships [12]. IT outsourcing conflict was also analyzed using the Graph Model for Conflict Resolution (GMCR), considering both perspectives in the outsourcing process (vendors and clients) [28]. Although these studies present essential critical factors for the outsourcing relationship, they do not comment on the limitations that influence the balance of the relational attitudes in ITO.

Our central assumption in this study is that the relationship that is established by the contractor plays a vital role in outsourcing success. However, despite the extensive literature on outsourcing relationships, few studies highlight the contractor's role in the ITO relationship. Consequently, there is a lack of research on the relational attitude of IT contractors towards ITO that this study intends to fill. This paper presents a strategic behavior categorization in ITO with the primary purpose of helping the managers identify and analyze the relational actions, evaluate the opportunities and challenges, and determine the company's most suitable attitude concerning outsourcing. This study proposed four strategic relational behavior (or attitudes) categories, supporting a better understanding of the knowledge transfer and relational governance attitude in ITO. This work continues and expands on a previous study by Poleto et al. [29].

The paper's remainder is organized as such: Section 2, which contains a literature review on knowledge transfer and relational governance in ITO; Section 3, which presents the research methodology; Section 4, which presents the results; Section 5, which contains the research contributions; Section 6, which contains our final considerations, limitations, and future directions.

2. Literature Review

2.1. Knowledge Transfer in ITO

Knowledge transfer in ITO refers to a contracting company's ability to gain and develop knowledge and skills from a relationship with its external partners [30]. In the outsourcing process, the suppliers can provide the support that is needed to help the contractors solve problems or complete an internal service in the company process [31].

Thus, the relationships between the clients and the suppliers can go beyond negotiating and contract fulfillment, being a collaborative decision-making process in a complex environment, involving a specific skill set from the involved decision-makers [32]. It is assumed that the contractors can directly benefit from technical information, knowing

their internal environment, competing for the products' technical specifications, and their products' quality and technical performance [33,34]. In a dynamic industry like IT, elements such as documented software code, market knowledge, technical knowledge, shared reports, or communications are essential to promoting different knowledge transfer forms, thus creating a competitive differential [35].

ITO allows the companies to focus on their ability to develop their core services or products and knowledge sharing through the incentive mechanism [36]. In this context, the effectiveness of the technical expertise can significantly impact the IT management's use of the contracted service. In addition, these technical skills are directly linked to the people's tacit knowledge in the work team, which directly influences the organization and registration given the complexity of drawing that knowledge from people's minds based on their experiences [37].

The contractor's strategies make way for new knowledge to address the internal issues involving IT services, ranging from maintenance services to custom services involving long-term projects to support strategic objectives and the knowledge construction process [38]. In this sense, knowledge transfer to develop the organization's internal services can be a slow and error-prone process, and outsourcing it can be seen as an indirect way of providing the necessary support [39].

In this sense, the environment existing around the contractors and the suppliers must ensure that there is knowledge integration within the domain of the contracted service to generate a sense of community in the process, ensuring that their knowledge and skills are shared for the mutual growth of both of these organizations [40]. Deciding on outsourcing and what to outsource, considering that outsourcing is managerial approach, is closely linked to the company's capacity for innovation in its business processes and the design of these processes, thereby allowing greater freedom for the company to focus also on their creative process, allowing internal knowledge to circulate and to be shared with their partners' knowledge management and decision-making styles, which will contribute to their organization's performance [41–43]. The alignment between a rigid or flexible profile in the decision-making process [44,45], for example, can influence how people deal with innovation and creativity, whether they have a fixed or an evolving mindset, thus assuming, in the latter case, a much more fruitful exchange of experiences occurs [46].

The proper allocation of resources, whether they are new or existing ones, in this context, creates a valuable and sustainable advantage for the company, influencing positively its ability to compete, which is a critical success factor for the organizational system and all business processes of a company to be executed healthily and successfully [47,48]. It can also be inferred that the knowledge that is being generated and circulating within the organization is an essential resource for the company to self-assess in a self-benchmarking process [49] by comparing its performance before and after the outsourcing implementation [50].

2.2. Relation Governance in ITO

Due to the ITO risks, there is a concern for relational governance because the success of a relationship depends on the transactions' quality. There is a mutual benefit between the parties, thus generating new strategic opportunities in their relationship [51]. Relational governance aims to establish a partnership between the parties in a contract that is based on exchanging benefits to strengthen the relationship to comply with the defined rules, directing the efforts to achieve the objectives, and meeting the parties' expectations [52]. Companies with a high level of outsourcing will only survive if they have many suppliers, which makes the relationship between the companies very dependent on what these suppliers determine at the market level [53]. Therefore, the selection of the supplier, when one is also thinking about the development of a partnership, is a fundamental process to ensure that the contracting party's activities are successful since a wrong choice can negatively affect the entire organizational system, mainly impacting the financial part of it [54,55].

Although the contracts play an essential role in the governance of IT outsourcing projects, the parties cannot foresee all of the possible conditions due to the limited rationality

of the people that are involved, and relational governance, which deals with softer aspects of the relationships, becomes necessary, and this concept has been receiving much attention over the last two decades [56]. Therefore, companies have adopted this approach to governing their relational behaviors with their partners [57].

In relational governance, the complexity of each outsourced IT activity may require a different attitude, and the contractor can participate actively or conservatively. Because the interactions between the contractors and their service providers can go beyond the rules of their agreements, which the contracting company must coordinate, relational governance and attitudes must be considered a critical success factor for outsourcing [3]. Thus, investigating the relational governance in ITO involves examining the contractor's role and how firms differ in their needs to use and allocate new resources.

We can highlight that the research that is reported in this article has its originality in proposing an approach to the description of behavioral profiles or typologies that are related to the attitude of companies participating in the ITO processes. We emphasize the descriptions that are presented for each of the four attitude types, which only appeared in our previous study [29], which are expanded upon here. The knowledge transfer between the companies in favor of exchanging valuable experiences and skills for their mutual benefit in a complex environment [30–32] is a prominent element in these descriptions. The methodology that was applied, centered on clustering, and it was proved to be adequate in addition to being easily implemented.

3. Methodology

The theoretical context that is developed in the previous section supports the characterization of the relational attitude of IT contractors. This attitude can be discussed in two levels of analysis: (i) the level of knowledge transfer, which concerns the type of outsourced services: traditional or customized; (ii) the level of the relational governance that is associated with the passive or active participation of the IT contractor that assigns the outsourced tasks. The central argument is that not all of the outsourced IT services should be managed similarly, with there being a same attitude which is held by the IT contractor. Thus, according to the service type, a differentiated management approach is required (i.e., traditional or customized; rigid or flexible [44]). Based on the literature review, the following two questions guided our investigation of the relational attitudes in ITO.

Question 1: *What is the role of contractor's attitude in outsourced IT services?*

It is assumed that each outsourced IT service can provide a knowledge transfer level for the contracting company. The contracting company may need to adopt a different relational attitude towards each outsourced IT project. In this scenario, it is possible to consider the contracting company's role in fulfilling the contract. Therefore, it is fundamental to understand its attitude regarding ITO.

The contracted IT services assume a static position in the relationship. That is, the IT contractors expect the IT suppliers to transform their business. In this sense, it is necessary to consider the role of the IT contractor within the relationship. Consequently, it is crucial to assume that there is a need to adopt a dynamic and distinct attitude for every IT outsourced activity. Therefore, to achieve a satisfactory relationship between the IT contractor and the IT supplier, all of the activities (whether traditional or customized; rigid or flexible [44]) must be coordinated and monitored by the IT contractor.

Question 2: *What are the contractor's relational attitudes towards ITO?*

Relational governance aims to establish a partnership between the parties that are involved in a contract by exchanging benefits between them, while strengthening the relationship and compliance with standards. That is, relational governance involves guiding these efforts to achieve the collective goals and meet the expectations of both of the parties.

The alliance between the IT contractors and the suppliers involves knowledge transfer to improve the operations and business results. The IT supplier contributes technical knowledge, while the IT contractor knows the business processes, enabling the transfer of

external knowledge to the internal environment of the contracting organization [58]. The relational governance perspective enables the IT contractors to improve their relationships and create new opportunities through IT outsourcing, while respecting the relational standards that specify the limits for both of the parties [58].

In sum, the difficulties in ITO are related to the attitude that is adopted by the IT contractor, that is, to its relational governance capacity regarding IT services. Therefore, it is essential to develop a strategic behavior categorization for the IT contractors to understand their attitudes in ITO. The theoretical meaning to characterize the IT contractor's relational attitude is discussed concerning two analysis levels. At the first level, knowledge transfer deals with the types of outsourced services, with them being traditional or custom. Relational governance is associated with the IT contractor's conservative or active outsourcing participation at the second level. The central argument is that not all of the outsourced IT services should always be managed in the same way, with the same attitude on the IT contractor; traditional and custom services require differentiated management approaches.

Data Collection

Our target was public companies that outsourced their communications service/information systems to create a strategic category that was relational of the contractor attitudes towards IT outsourcing. All of the IT services that were relevant to the contractor attitudes were considered to validate their strategic behavior.

The companies were selected from a database that was compiled by the Industry Syndicate of Espírito Santo State (Brazil), located in Vitória, that contains information on 1180 industrial firms. A questionnaire was sent to 532 companies that were selected for their examination to request the information on outsourcing relationships. A total of 247 questionnaires were returned (46%). The high response rate was achieved because we only contacted the companies that outsourced their IT needs, thus reducing the possibility of a non-response bias occurring. Table 1 presents the sampling process in three phases. The data that were analyzed in this study were collected from the sources that are shown in Table 2 between April 2018 and June 2019 in Brazil.

The research used pre-test scales in which adaptations were made, thereby generating the questionnaire that was used. The items that were under analysis in the questionnaire were assessed using a 7-point Likert scale, where the extremes were: 1 = strongly disagree and 7 = strongly agree. Figure 1 presents a workflow with a summary of the explained methodological process.

The companies that hire IT services often take a static position in the relationship. In other words, the IT contractors expect the suppliers to transform their business. In this sense, it is necessary to consider the role of the IT contractor within the relationship. Consequently, it is crucial to adopt a dynamic and distinct posture in each of the outsourced IT services, considering the project's characteristics that are in development. Therefore, to achieve satisfactory levels of the relationship between the IT contractors and the suppliers, all of the technical or traditional services must be coordinated and monitored by the contractors [59,60].

A summary of the companies which answered the questionnaire, according to Poletto et al. [29], is presented in Table 2. The companies that outsource their communications services/information systems were the target of this study.

Based on the analysis of the data that were collected using a questionnaire, a strategic behavior categorization in ITO was developed. This study considered the cluster analysis technique to (i) group the IT contractors, (ii) validate the strategic behavior categorization, and (iii) analyze the related attitudes. For this purpose, the methods that were recommended by Hair et al. [61] were used: (a) hierarchical grouping to determine the number of clusters to be formed, and (b) non-hierarchical grouping to formulate the final cluster.

Table 1. Sampling process adopted in the study.

Phase	Description	Size
Population definition	This phase was intended to the definition of the population for sampling. Simple random sampling was applied, starting with the calculation of the initial sample size using a proportion: $n_0 = \frac{z_\gamma^2 p(1-p)}{E_0^2}$ where: n_0 is the initial sample size; z_γ is the confidence interval according to a confidence; level γ ; p is the proportion; E_0 is the maximum tolerated error.	1180 companies
Sample selection to submit the questionnaire	With n_0 calculated, it was possible to determine the final sample size for a finite population: $n = \frac{N \cdot n_0}{N + n_0 - 1}$ where: n is the final sample size; N is the population size. The companies to which we sent the questionnaire were randomly selected based on the final sample size.	532 companies
Receiving answered questionnaires	The final value in this phase corresponds to the number of completed forms that were received within the defined deadline.	247 companies

Table 2. Participating companies' summary according to Poleto et al. [29].

Items	Description	Percentage
Number of employees	0–100	44.7%
	101–500	47.3%
	501–1000	8.0%
IT Team size	<5	62.9%
	6–20	33.0%
	21–50	4.1%
Experience in IT outsourcing (Years)	0–3	9.73%
	3–6	31.98%
	>6	58.29%
Type of contract	Standard Contract	44.9%
	Custom Contract	28.74%
	Informal SLA (without contract)	26.36%
Contract period (Years)	0–1	23.88%
	1–3	36.03%
	>3	40.09%

Note. Extracted from “A Typology of Relational Attitude in IT Outsourcing: An Analysis on the Contractor’s Perspective,” by Poleto, T.; Nepomuceno, T.C.C.; de Carvalho, V.D.H.; Costa, A.P.C.S, 2021, Advances in Intelligent Systems and Computing, Volume 1367, p. 298. Copyright © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

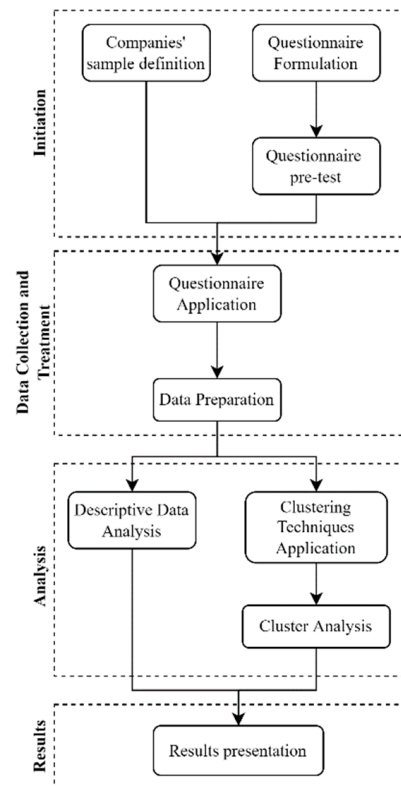


Figure 1. Methodological workflow of this study.

4. Results

The primary focus of the research was to identify the attitude of the contracting firm towards outsourcing their IT services. We considered the relationship between knowledge transfer and relational governance in this regard. In addition, we proposed a strategic behavior categorization for ITO, representing a significant contribution to the research on the theme of outsourcing. We found four distinct types of IT contractors based on whether the outsourced IT service was traditional or customized and whether the relational governance in the outsourcing was active or passive. The strategic behavior categorization offers an opportunity to characterize the relational attitudes of the contractors for the IT services holistically.

We used a cluster analysis to group the IT contractors and analyze their relational attitudes. To this end, we adopted the methods that are recommended by [62]. Hierarchical grouping was used to determine the number of categories to be formed, and non-hierarchical clustering was used to formulate the final clusters. Table 3 reports the items in the questionnaire, the associated factor loadings, and the T-values according to the participating companies' responses [29].

Table 4 shows the reliability results based on our calculation of Cronbach's alpha. In this paper, we adopted the Cronbach's alpha values with limits that were close to or larger than 0.70. Therefore, our measurements are reliable [63].

Table 3. Questionnaire items and related indices according to Poleto et al. [29].

Dimension	Items	Factor Loading	T-Value
Conservative attitude	How would you describe the attitude in the relationship style in IT outsourcing?		
	... outsourcing is adopted to reduce internal operating expenses.	0.69	13.21
	... outsourcing is adopted to increase job performance and focused core competence.	0.75	14.81
	... outsourcing is adopted to meet the short-term needs.	0.64	12.10
Collaborative attitude	How would you describe the attitude in the relationship, given the dependency on IT outsourcing?		
	... we are seen as partners in developing and improving relational quality.	0.86	19.18
	... planning the services IT outsourcing together with the IT department.	0.74	14.02
	... interact with frequencies to strengthen long-term relationships.	0.70	13.90
Opportunistic attitude	How would you describe the attitude linked with suppliers towards IT outsourcing?		
	... avoids routine services outsource IT to enhance the average daily gain or minimize downtime.	0.86	19.18
	... omits a lot of interesting data to preserve their interests.	0.73	13.84
	... have been informal arrangements with the supplier of IT.	0.67	12.72
	... IT outsourcing to allow the benefits of using to be maximized.	0.75	14.94
Transformational attitude	How would you describe the attitude of investments in technology and professional qualification?		
	... looking for trendsetting technological solutions in the national and international markets.	0.74	13.31
	... outsource IT services to explore and discover new knowledge to the results of its business.	0.69	13.08
	... outsource IT services with excellent opportunity to serve our customers.	0.72	13.17

Note. Extracted from “A Typology of Relational Attitude in IT Outsourcing: An Analysis on the Contractor’s Perspective,” by Poleto, T.; Nepomuceno, T.C.C.; de Carvalho, V.D.H.; Costa, A.P.C.S, 2021, *Advances in Intelligent Systems and Computing*, Volume 1367, p. 300-301. Copyright © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

Table 4. Reliability results in the research constructs.

Construct	Cronbach’s Alpha	Composite Reliability	AVE
Conservative attitude	0.70	0.73	0.41
Collaborative attitude	0.78	0.82	0.52
Opportunistic attitude	0.76	0.81	0.46
Transformational attitude	0.71	0.76	0.43

We performed a detailed validation of the convergent and discriminant constructs as recommended by [64]. Thus, a confirmatory factor analysis (CFA) was applied to the model, and the correlations between the pairs of constructs were adjusted to 1.0. The significant chi-square differences in the 0.01 range indicate the acceptable discriminant validity. In addition, for each construct, we calculated the square root of the AVE. The results indicate that all of the square root values of AVE were more significant than the correlations were, thus confirming the acceptability of the discriminant.

A cluster analysis was used to classify the IT contractors according to the outsourced activity and the relational governance types. The objects of analysis were moved into and out of the category to obtain the most significant ANOVA results. The analysis identified four groups of IT contractors that characterize the relational attitude. The nomenclature was based on two dimensions: knowledge acquisition and relational governance. The categories were: “Conservative attitude” (Dimension 1), “Collaborative attitude” (Dimension 2), “Opportunistic attitude” (Dimension 3), and “Transformational attitude” (Dimension 4). The results of the cluster analysis are presented in Table 5.

Table 5. Reliability and validity.

Category	Relational Governance	Knowledge Transfer	n	F
Conservative attitude	4.21	3.95	95	121.01 *
Collaborative attitude	5.50	4.03	72	72.21 *
Opportunistic attitude	4.00	5.17	37	132.22 *
Transformational attitude	5.63	5.83	43	151.02 *

* $p < 0.001$.

A detailed discriminant analysis was performed to assist in interpreting the underlying category (see Table 6). The dimensions of knowledge acquisition and relational governance present eigenvalues elevators that are near 1.0 and they explain more than 70% of the variance. In addition, these two dimensions are reflected in the balance among the types: conservative attitude, collaborative attitude, opportunistic attitude, and transformational attitude (Table 7). Therefore, the contractors could be grouped according to their different relational attitudes based on knowledge acquisition and relational governance.

Table 6. Discriminant analysis.

Category	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
Conservative attitude	3.103	23.20	23.20	0.797 *
Collaborative attitude	2.020	17.56	40.76	0.662 *
Opportunistic attitude	1.240	26.79	67.55	0.422 *
Transformational attitude	0.785	32.45	100.00	0.361 *

* $p < 0.001$.**Table 7.** Canonical discriminant function coefficients.

Category	Relational Governance	Knowledge Transfer
Conservative attitude	0.523	0.662
Collaborative attitude	0.517	0.231
Opportunistic attitude	0.631	0.422
Transformational attitude	0.310	0.125

The categories that were obtained from the results indicate that the contractors can exhibit dynamic attitudes and behaviors in ITO. Each category was interpreted based on the relationship between the customer and the supplier. Figure 2 illustrates these categories which are related to Relational Governance and Knowledge Transfer according to Poletto et al. [29].

The first category refers to the “conservative attitude” that reflects how the contracting companies see outsourcing, particularly in reducing the internal operating expenses or meeting the short-term needs which correspond to 95 contractors (38.49% of the sample). The second category, “collaborative attitude” includes 72 contractors (29.14%), and it considers their outsourcing commitment. The third category, “opportunistic attitude” regards the contractors’ agreements to maximize their outsourcing benefits and interests; it includes 37 contractors (14.97%). The fourth category, “transformational attitude” includes 43 contractors (17.40%).

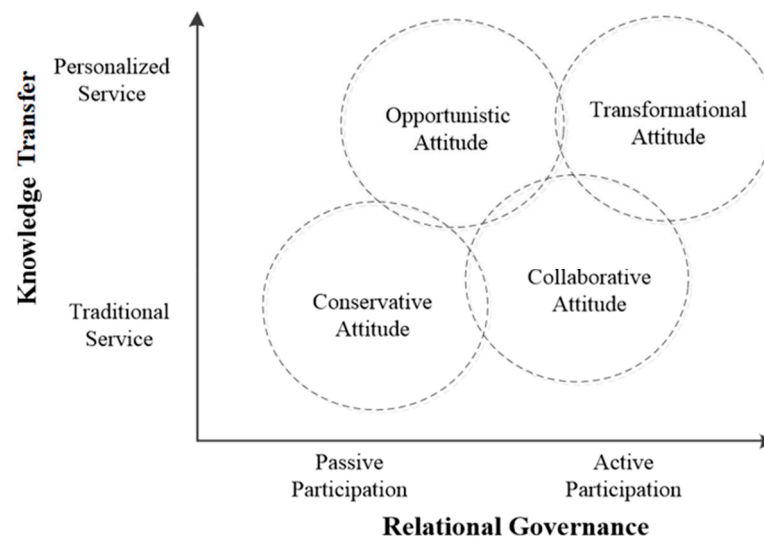


Figure 2. Relational strategic behaviors (or attitudes) in IT outsourcing according to Poleto et al. [29]. (Note. Extracted from “A Typology of Relational Attitude in IT Outsourcing: An Analysis on the Contractor’s Perspective,” by Poleto, T.; Nepomuceno, T.C.C.; de Carvalho, V.D.H.; Costa, A.P.C.S, 2021, *Advances in Intelligent Systems and Computing*, Volume 1367, p. 301. Copyright © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.).

Discussion about the Behaviors/Attitudes

Under the theoretical developments that are presented by Poleto et al. [29], each category of strategic behavior in Figure 2 has a particular interpretation, which translates into how the companies act in their outsourcing relationships, as discussed below:

In Dimension 1—Conservative attitude, the contractor presents restricted concerns and interests for their investment in IT services. For most of the contractors that adopted conservative attitudes in the outsourcing process, their hiring of IT services focused on adopting the technological resources to expand their productive capacity without necessarily having the interest to compete in the market.

The difficulties that are faced by a contractor with a conservative attitude primarily concern the restrictions on the investments in communications media and the involvement of organizational departments. These difficulties cause errors and confusion when they are transferring information and other knowledge. These restrictions may reflect them being perceived as being without control and having a lack of confidence in disseminating information in the internal environment.

Another characteristic of a contractor with a conservative attitude is a lack of clarity in defining the roles of the professionals that are involved in IT. To remedy this problem, we recommend developing policies and rules that define and respond to the behavior and roles that ensure that there is control in the relationship between the contractor and the supplier regarding the qualified personnel. For example, indicators can be constructed and used to evaluate the performance of each outsourced IT activity and to establish internal confidence in the quality of the IT support services. This perspective favors the management of it over the entire organization’s image of the IT department.

Dimension 2—Collaborative attitude is characterized by a relationship in which knowledge exchange involving technologies, resources, and processes occurs between the contractor and the supplier. It indicates the contractor’s interest in creating and maintaining a consistent relationship with the IT services organization. This relationship is formed based on the active participation in the exchanges of information and knowledge between the parties. Most of the organizations that stand out for presenting this stance point out the importance of developing relational management as a contributor to the strategic plan and they highlight the critical factors of this management for organizational development.

The collaborative attitude involves explicit knowledge that is propagated through the use of IT tools [65]. In terms of processes, this knowledge is helpful for the communication mediums that employees use to exchange knowledge. In this context, the contractor understands and invests in their knowledge management, which values the development of the qualifications of the professionals who are allocated to the elaboration of the IT outsourced services. From the management perspective, knowledge acquisition can be improved beyond formalizing the policies and role regulation. Here, the knowledge consists of the formalization of the responsibilities and the management of information and the communication technologies.

Dimension 3—Opportunistic attitude can be characterized as an ITO process in which the contractor maintains a strict interest in getting involved and participating in an exchange relationship with the contracted company, but it guarantees the development of its business processes from the opportunity that is created by the IT services contract. Such facts imply that the contracting organization inhibits its participation in the outsourcing process' relationship, leaving only the contracted company to be responsible for fulfilling the goals and the delivery of the services.

A contractor with opportunistic attitudes seeks to develop their businesses by depending on outsourced services, which is indicated by the high level of knowledge transfer. However, such a contractor fails in the relational aspects that involve the operational challenges of this. One way to minimize the impacts of these challenges is for them to act in ways that develop the coordination and direction of the contracting organization interactively and continuously concerning the outsourced activities. To achieve this goal, the signs that alert the contractors regarding their required contribution must be identified as those factors that compromise the participation of both of the organizations in the relationship must be established in the contract. Therefore, the IT contractors must encourage and develop a relational perspective to understand the lack of coordination, control, and commitment that can occur when one is outsourcing.

The opportunistic attitude towards ITO involves adopting a rational view of the internal changes that must be developed by the contractor rather than simply regarding these changes as the responsibility of the contracted organization. In this way, when an organization assumes the role of the main driving force of the relationship, it can define, create, and maintain new business processes [66].

In Dimension 4—Transformational attitude, the ITO contractors seek to acquire new technologies that directly influence their business, thereby providing opportunities to improve their internal capacity, technologies, and processes. The outsourced IT services require regular supplier interaction, thus contributing to the relational governance. As a result of their active participation, the contractor is interested in exploring new knowledge, understanding the IT service dynamics, developing new ideas for improving the business, and other strategic interests. Business arrangements and negotiations with this characteristic of active interaction and mutual information sharing can lead to both parties having an optimal level of aggregate prospects and deliberations [67]. In this way, the contractor can align the knowledge that is obtained through the supplier with their internal knowledge and open innovation abilities, and they can use flexible learning to achieve a strategic capability for this [42].

Despite them having a high level of productivity, the organizations with this attitude are not exempt from experiencing outsourcing project failures. Such failures may result from the poor planning and execution of the outsourced activities, which are generally the result of contradictions and imbalances concerning the business prospects. However, these organizations maintain management standards that enable the reengineering of their processes, which enables due attention to be focused on the real business perspectives given the organizational structure that is based on changes [68], the impacting organizations' tangible and intangible resources, and improving their competitiveness through increasing their absorptive, innovation and design capacities [69].

5. Research Contributions

This work has several contributions. It describes the strategic behavior categorization for the service contractor and helps companies to develop relations with other suppliers and improve their strategies for future ITO processes. Thus, according to the strategic categorization, each outsourcing activity requires a different relational attitude from the service contractor.

The findings suggest that the relational attitude should be adjusted to the individual contractors' conditions, specific characteristics, and sectors. We found that the conservative attitude was most prevalent among the analyzed companies. However, this attitude does not necessarily result in a poor performance.

We also found that in addition to the attitude to the outsourcing relationship, the type of outsourced activity (i.e., traditional or customized; rigid or flexible [44]) enables the managers to identify the need to balance their participation in relational governance. The strategic behavior categorization encourages the IT professionals to view outsourcing as an opportunity to acquire new knowledge from the relationship with the supplier, thereby developing the relationship's quality and consequently, the outsourcing performance [24], and the capacity for innovation of their management processes, products, other process, and technologies [70] to be shared in the form of explicit knowledge among the companies in the outsourcing relationship [71].

More interestingly, a strategic behavior categorization, aiming at grouping the managers' attitudes, encourages internal improvements in the organizations and adopts a new perspective in analyzing the ITO relationships. Based on our results, an IT department's failure to recognize the importance of certain IT activities does not mean that it does not accept relational governance. Similarly, because the outsourced IT services do not provide a high degree of knowledge transfer for the contractor, it does not necessarily mean that the contractor should not adopt a relational governance mechanism. As previously indicated, knowledge transfer and relational governance should be understood as characterizing the IT contractors' attitudes, with appropriate indications for each attitude being adopted by the contractor [28]. The applied grouping process to define the managers' attitudes is like the interest-ability profiles that are generated in the study by Hyland et al. [69], who applied Latent Profile Analysis (LPA) in a clustering/grouping method.

The contracting organization should consolidate a relationship of trust and commitment with the contracted organization to achieve success in the outsourcing process and ensure the consolidation of a trusted partnership. This relationship can assure the managers that the outsourced tasks will be performed according to the project contract's established goals without compromising the business development processes. This consideration enables the contracting organization to develop coordination and control skills through their investment in and participation in the process.

The results from our study support the idea that contracting companies must acquire new skills and knowledge [72], and thus, be able to influence the outsourcing process in which they are involved positively. The exchange and absorption of new knowledge to improve the performance of these activities are also processes that benefit from a better understanding of the positioning of the company's relational behavior profile [73]. Thus, the IT managers receive support and obtain an impression of the strategies that are used in addition to cost reduction. In addition, they learn to evaluate the IT outsourcing from a multidimensional perspective as the strategic behavior/attitude for business development.

Finally, our results represent an advance in the research on outsourcing concerning a better view of the role of relational governance for the contractors. The strategic behavior categorization can be easily understood by the managers who seek to identify the relational attitude of their own companies as IT service contractors.

6. Final Considerations

This paper has proposed a strategic behavior categorization for identifying the attitudes in the ITO relationships, and we have carried out a study of this from the contractors'

perspective. The premise is that by outsourcing the IT operations, the contractor will be free to improve its processes and benefit from the expert knowledge of the professionals of the chosen service provider, thereby helping to develop strategic opportunities for managing their assets.

This work's primary effort is to analyze the relational skills in IT outsourcing, with a particular interest in the attitudes that are adopted by the contractors, thereby generating a valuable tool to support the adoption of relational governance. It is noteworthy to focus on developing the research and analysis from the contractor's perspective, thus helping to develop IT outsourcing. The research defined four distinct categories of relational behaviors (or attitudes) for IT contractors when considering the type of outsourced IT service, whether this was custom or traditional, and active or passive relational governance.

ITO can present different results in specific contexts, but in our study, two dimensions were used: knowledge transfer and relational governance. The dimensions supported the characterization and description of the different attitude categories using data that were collected from Brazilian companies that employ ITO. As a result of classifying the attitudes using dimensional techniques, it becomes possible for the entire company to identify its attitude profile and, if necessary, generate changes in its relationship with ITO process to achieve success.

Limitations and Future Directions

In this study, as our main limitation, the exploratory relationships reduced the data variability and demanded a more conservative test for strategic behavior categorization. Thus, we encourage further research on each relational attitude with data sets that include the exploratory relationships. Another point for further research is to explore not only one perspective in the IT outsourcing relationship, but the contractors and the suppliers together, thereby providing new insights on how their profiles can influence the development of their partnership.

Another relevant point, in terms of the limitations of this work, is the representativeness of the sample of the research participants. Even though we obtained a significant number ($n = 247$) of responding companies/managers, this sample is still limited geographically. To solve this problem, an important direction to be taken for new studies is to diversify within the Brazilian territory, for example, the application of research to other states, reaching business audiences that, although they may be within the same field of activity (IT), may have different cultures.

From this observation, we can extract another critical aspect that is to be considered: the existing business culture in each region of Brazil. Therefore, analyzing the effect of the regional business culture variation on the strategic behavior of companies in ITO relationships is another future direction.

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