

TARGET COSTING IN MICRO AND SMALL COMPANIES FROM THE INFORMATION
TECHNOLOGY (IT) SECTOR¹

*CUSTO ALVO EM MICRO E PEQUENAS EMPRESAS DO SETOR DE TECNOLOGIA DA IN-
FORMAÇÃO (TI)*

Antônio André Cunha Callado

Doutor em Administração (UFPE)
Universidade Federal Rural de Pernambuco (UFRPE)
andrecallado@yahoo.com.br

Aldo Leonardo Cunha Callado

Doutor em Agronegócios (UFRGS)
Universidade Federal da Paraíba (UFPB)
aldocallado@yahoo.com.br

Emanoel Truta do Bomfim

Doutor em Ciências Contábeis (UFPB)
União de Ensino Superior de Campina Grande (UNESC)
emanoeltruta@hotmail.com

ABSTRACT

Objective: This paper aimed to investigate the use of aspects regarding target costing among micro and small companies in the IT sector.

Background: Target costing has been studied mainly among large manufacturing companies and the current literature does not present significant evidence regarding the use of principles of target costing in the context of small companies from service sectors.

Method: Groups of ordinal variables regarding the profile of respondents, the profile of companies, companies' strategies, and target costing. Data collection was made through the application of a structured questionnaire containing questions related to the four groups of variables related to the fourteen companies from the IT sector located in Campina Grande/PB, Brazil. Spearman correlation coefficient was used to test the statistical significance of relations between the profile of managers and aspects related to the organizational strategy.

Results: The findings point out evidence of the relevance of the business environment regarding the use intensity of aspects of target costing principles, the role played by the business environment regarding the use of aspects of target costing principles among the investigated companies, and the presence of isomorphic behavior among these companies.

Contributions: This survey contributes to the literature by presenting findings provide evidence

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regarding the role of business environment and the capability of micro and small companies to translate strategy into specific objectives in the use of target costing principles.

Keywords: Target Costing. Micro and small businesses. Cost management.

RESUMO

Objetivo: Este artigo teve como objetivo investigar a utilização de aspectos relativos ao custeio-alvo entre micro e pequenas empresas do setor de TI.

Fundamento: O custeio-alvo tem sido estudado principalmente entre grandes empresas de manufatura e a literatura atual não apresenta evidências significativas sobre a utilização dos princípios do custeio-alvo no contexto de pequenas empresas do setor de serviços.

Método: grupos de variáveis ordinais em relação ao perfil dos respondentes, o perfil das empresas, as estratégias das empresas e o custo-alvo. A coleta de dados foi feita por meio da aplicação de um questionário estruturado contendo questões relacionadas aos quatro grupos de variáveis referentes às quatorze empresas do setor de TI localizadas em Campina Grande / PB, Brasil. O coeficiente de correlação de Spearman foi utilizado para testar a significância estatística das relações entre o perfil dos gestores e aspectos relacionados à estratégia organizacional.

Resultados: Os achados apontam evidências da relevância do ambiente de negócios quanto à intensidade de uso dos aspectos dos princípios do custeio-alvo, o papel do ambiente de negócios quanto à utilização dos aspectos dos princípios do custeio-alvo entre as empresas investigadas, e presença de comportamento isomórfico entre essas empresas.

Contribuições: Esta pesquisa contribui para a literatura ao apresentar resultados que fornecem evidências sobre o papel do ambiente de negócios e a capacidade das micro e pequenas empresas de traduzir a estratégia em objetivos específicos no uso dos princípios do custo-alvo.

Palavras-chave: Custeio-alvo. Micro e pequenas empresas. Gestão de custos.

1 INTRODUCTION

The need for changes in information provided by cost accounting was prominent in the early 1980s, when one could observe that productivity and management systems among Japanese companies were superior to the North American and Western ones, indicating that traditional cost management methods used, such as standard costing, had lost relevance due to economic changes that occurred over previous decades (Kaplan, 1983).

Traditional cost systems were no longer meeting companies' needs as the economic scenario became more dynamic and competitive, being a challenge for cost accounting to provide new cost information systems aligned with the strategy of organizations, that is, cost management should be strategic (Kaplan, 1983; Shank, 1989).

Strategic cost management should provide cost information for both development and implementation of strategies, creating tactics to implement them, as well as development and implementation of control mechanisms for monitoring and reaching strategic objectives (Shank, 1989).

In this context, market-oriented systems of control, measurement, and management of costs, such as target costing, are seen as appropriate strategic cost management practices that enable companies to engage in competitive pricing, delivering desirable profit at a maximum cost as determined by the selling price (Gagne et al., 2007).

Target costing was created during the 1960s in Japan by Toyota. This system is considered a practice for profit planning and cost reduction that occurs from the development of the product to its disposal, being recommended to be used in environments where price is influenced by the

level of competition among companies (Camacho, & Rocha, 2007; Ansari, Bell, & Okano, 2007; Brito, Garcia, & Morgan, 2008).

The development of target costing occurred due to the focus change on pricing and the possibility of cost reduction. In this costing system, the price of a product is determined by the market and the possibility of cost reduction is centered in the design phase, that is, during the process of designing and developing new products and services (Dekker, & Smitd, 2003).

According to Dekker and Smitd (2003), target costing is characterized by three elements: (i) orientation of the market, where the selling price is the starting point for determining the target cost; (ii) coordination of functions, in which coordination of activities should be carried out to achieve the target cost; and (iii) strategic learning, once that interaction with others does influence the cost structure in the long run.

According to Ansari, Bell and Okano (2007), over the last two decades the methodology of target costing was adopted by several companies from the United States and Europe, but its application is still considered incipient when compared to Japanese companies. In Brazil, the use of target costing is also relatively modest (Camacho & Rocha, 2007; Ferreira & Machado, 2015).

Despite the increasing usage of target costing in companies from different sectors in the early 1990's, according to Bhimani and Okano (1995, p. 42 apud Bertucci, 2008), "there are many companies making use of various aspects of target costing, though not referring to the term". Hopper, Koga and Goto (2014) state that there is little research on management accounting in small and medium sized companies. According to Ferreira and Machado (2015), notwithstanding the range of research on target costing, no previous studies on the application of this tool in small companies have been identified in Brazil.

According to Yazdifar and Askarany (2012), many studies assume that Target Costing is only relevant for manufacturing companies and, therefore, does not invest in technical information about services, and consequently exclude service companies from their investigations and analyzes. In view of this context, the need to investigate aspects associated with service providers is emphasized from an analysis perspective based on Target Costing.

The usefulness of the information generated by Target Costing in service provider companies is also defended by Dutra Filla, Pavão and Borges (2018) pointing out that information from the Board of Directors helps in decision making, in the resolution problems in the formation of the sale price of its services that can serve as a basis for closing future contracts and creating new packages, therefore, help a lot in the company's profitability.

Besteiro, Borinelli and Russo (20019) corroborate this perception, since these authors encourage theoretical approaches to be tested in practice, considering the context of service companies, such as Target Cost Management. These authors defend this stimulus, since there is a "common sense" in the academy that much of what is done in costs is turned to manufacturing. Therefore, the development of investigations involving Target Costing in organizations in addition to manufactures, presents itself as being fundamental to the development of a broader knowledge from different perspectives of cost management.

Considering the importance of small businesses for the generation of wealth in the Brazilian market, which represent 99% of formalized entities within the country, according to the Brazilian Micro and Small Business Support Service – SEBRAE (2014), as well as the need for a management of costs oriented by market-focused practices, such as target costing, the following question arises: Do aspects of target costing have being applied by micro and small businesses in the IT sector for their management of costs?

The objective of the research was to investigate the use of aspects regarding target costing in the management of costs among micro and small companies from the IT sector in the city of Campina Grande–PB. The IT sector ranges activities regarding microelectronics, telecommunica-

tions, and computing. According to the Brazilian Association of Software Companies - ABAES (2019), in 2018, the IT sector grew by 6.7%, with the segment growing 9.8% in Brazil, reaching US\$ 47.7 billion, if we consider software, services, hardware and exports. Considering this context, Brazil remained in the 9th position in the world ranking, representing 2.1% of the global IT market and 42.8% of the Latin American market.

The domestic IT market represents US\$ 46,637 million, of which US\$ 10,479 million in the software market, US\$ 12,262 million in the services market and US\$ 23,896 million in the SOFTWARE market (Abaes, 2019). According to International Data Corporation - IDC (2020), the IT services market in 2019 grew by 6.4% in relation to the previous year and earned more than R\$ 40 billion in Brazil. The growth was driven by improved cloud performance, workload management in hybrid environments and cost control. Also according to IDC (2020), in 2020, the ICT market is expected to grow 4.9% in Brazil.

This study is justified in that it aims to contribute to develop the literature that deals with target costing, becoming relevant because it is intended to identifying aspects of the mentioned method applied by small enterprises, since these entities have been subjected to an ever-increasing competition, and target costing may enable them to provide useful information on the strategic management of their costs.

The contribution of the study lies in presenting evidence about aspects of the target costing used by micro and small Brazilian, highlighting relationships, mainly, with characteristics of the managers, since the studies carried out in this line, for example, investigated the implementation of target costing (Dekker & Smitd, 2003; Hamood, Omar, & Sulaiman, 2013; Sharafoddin, 2016; El-Dalahmeh, 2018) regarding contingency factors (Ax, Greve & Nilsson, 2008; Gonçalves, Gaio, & Silva, 2018), and products development (Rattray, Lord, & Shanahan, 2007).

2 LITERATURE REVIEW

2.1 Target Costing

After World War II, the desire by Japanese companies for a more strategic management of costs came when they had to face fierce competition from Western companies, especially from the USA. In 1965, Toyota, attempting to become more competitive based on the concept of value engineering, created a system for innovation of methods and techniques for product development and management of its costs, focusing on continuous improvement, known as target costing.

Although it emerged during the 1960s in Japan, target costing only came to be known and used in the United States and in the West from the last twenty years, and its development is still considered timid when compared to the maturity of its application by Japanese companies (Ansari, Bell, & Okano, 2007).

Target costing is perceived as a strategic management system designed to manage costs of goods and services, seeking to identify new materials, at lower costs, for replacing components of the product, aiming to improve competitiveness (Dekker & Smidt, 2013).

According to Ansari, Bell and Okano (2007), target costing is a profit planning and cost management system which ensures that new products and services reach a market-determined price and generate profit. Garrison, Noreen and Brewer (2013) state that this system can be understood as the process of determining the maximum possible cost for a new product and then develop a prototype that can be profitably produced at that maximum value.

According to Ono and Robles Júnior (2004), target costing can also be defined as a practice of profit and cost management that can be applied mainly to new products and services (or that have undergone adaptations in their projects), in order to guarantee them a competitive price, making profitability possible throughout its life cycle at an acceptable cost determined by the selling price.

Ansari, Bell and Okano (2007) argue that the idea of target costing can be summarized in a simple relation, where the target cost (goal) of a product is determined by subtracting the desired profit margin from the target price, according to Equation 1:

$$\text{Target cost} = \text{Target price} - \text{Desired profit} \quad (1)$$

The target price of a product is determined during its design phase by market research, to identify the attributes of the goods desired by customers. In turn, the desired profit margin is also defined during the product design, based on short and long term strategic objectives and goals. And, the target cost represents the maximum cost of production, taking into account the target market price and the profit desired by the company (Gagne, & Discenza, 1995; Brito, Garcia, & Morgan, 2008; Ferreira, & Machado, 2015).

Target costing, which is a management of costs process, should not be confused with target cost, which is one of the components and object of target costing, along with the target selling price and the desired margin of profit (Camacho, & Rocha, 2007; Brito, Garcia, & Morgan, 2008).

To achieve a target cost, target costing is based on continuous improvement concepts and tools, such as kaizen costing and functional cost analysis, which should be applied throughout the entire product life cycle, aiming to reduce costs so as to achieve the cost target established (Gagne, & Discenza, 1995; Brito, Garcia, & Morgan, 2008).

In addition, target costing, because it is a dynamic process, requires the participation of people from all sectors of the company, such as management, marketing, production engineering, cost accounting, and sales. This interaction among the organization's departments aims to align all activities for reaching the admissible target cost goal (Gagne & Discenza, 1995; Brito, Garcia & Morgan, 2008).

According to Scarpin (2000), target costing is characterized by the following objectives: (i) change in vision about the selling price formation, where cost is not the factor that determines price; instead, price is what determines cost; (ii) promote complete integration among all sectors of the company for, so that target costing functions properly, all departments must be in tune in order to fully meet all efforts for reduction of costs; and (iii) carry out analysis on the cost of the product, not only during the production process, but throughout its life cycle, that is, from its conception to its disposal, so that continuous improvements are presented.

Target costing can be also characterized by a set of key principles that sets it apart from traditional methods. According to Ansari, Bell and Okano (2007) and Nascimento et al. (2013), the target costing principles are:

- Cost defined by price: unlike traditional methods, cost does not determine the price of the product, but the selling price determines the target cost to be achieved;
- Focus on the customer: the product is designed to meet the needs of clients and how much they are willing to pay;
- Focus on the project: all costs inherent to the products must be determined during the design phase, for investment mistakes in irrelevant or sunk costs are difficult to recover;
- Multi-functional teams: cost management must involve all departments of the company within the process of planning new products;
- Guidance by product life cycle: product cost management must consider its entire life cycle, from the acquisition of raw material to disposal, in order to reduce the product life cycle costs; and
- Value chain involvement: strategic partnerships between the company and other stakeholders in the value chain are needed in order to reduce costs and meet the cost targets established, as well as creating value for customers.

Only after strategic adoption and compliance with these principles it is possible to begin the implementation of target costing. Its implementation process may vary from organization to organization, but the basic steps are similar (Brito, Garcia & Morgan, 2008).

According to Gagne and Discenza (1995), the process of implementing target costing comprehends four steps. First step begins by defining the price of the product through market analysis. Step two refers to sales volume estimation. Step three aims the establishment of the profit margin desired for the product. Step four covers the determination of the target cost. Step five is the execution of functional cost analysis, through value engineering; determining cost estimates. Step six identifies whether cost estimates have met the target – if not, new cost functional analyses are to be performed. In step seven, after reaching the target cost and the viability of the product, management decides on its manufacture and authorizes production to start.

It can be observed that the process of implementing target costing is complex, since it starts with a market analysis, to define the selling price to be practiced, going through the definition of the profit margin desired and the functional analysis of costs, aiming to reduce unnecessary costs to make the product viable, ultimately achieving the target cost set by the organization.

According Horgren, Datar and Hajan (2015), the implementation of target costing should go through the following steps: (i) development of a product that meets the needs and desires of customers; definition of the target price, based on the market-allowed value, i.e., what customers are willing to pay and the prices charged by the competition; (ii) obtaining the target cost per unit by subtracting the profit margin desired from the target price; (iii) and usage of value engineering to attain the target cost of the product.

For Cooper and Slagmulder (1997), the process of implementing target costing must be well disciplined to be effective, which involves a set of activities, segregated into three stages: (i) market-driven costs: identification of market conditions, the target selling price and the desired profit margin; (ii) target costing at product level: starting with the maximum cost allowed, according to the analysis of the market conditions; involves strategic cost management activities; cost estimation and the objective for reduction of costs, in order to achieve the target cost per product; and (iii) target costing at component level: involves suppliers, target cost per component, and target cost per function.

By means of case studies, Ellram (2006) describes that, in the United States, the implementation of target costing by companies is carried out in six stages, namely: (i) identification of the characteristics desired for the products; (ii) establishment of the target selling price; (iii) determining the target cost of the product; (iv) allocation of the target cost to the material level; (v) development of cost management activities; and (vi) continuous improvement.

Thus, the process of implementing target costing must be guided by a strategic management that analyzes market conditions, defines profit and cost targets, and implements the necessary tools to achieve the goals established, enabling the fabrication of a product that is both competitive and meets the expectations of customers.

Nascimento et al. (2013), based on the literature, emphasize that target costing has the following main strengths: quality optimization, cost reduction and qualification. However, this method also presents some weaknesses, such as: exaggerated pressure on suppliers in order to reduce costs, generating frictions in the relationship with them; high level of employee stress due to the demand to reach the target cost; and increased development time and minimal reduction of product costs.

According to Hamood, Omar and Sulaiman (2011), a successful adoption of target costing should be related to influential factors related to the company's strategy of product development and expectations of customers.

2.2 Empirical Evidence

Previous studies have presented empirical evidence concerning the implementation of target costing principles in companies. Dekker and Smitd (2003) investigated the use of target costing practices by Dutch firms listed in the Amsterdam Stock Exchange. The evidence suggests that Dutch companies use costing techniques similar to target costing concepts, being adopted in circumstances of intense competition and highly uncertain environment. Moreover, such practices were used with the aim of reducing costs, especially during the product development phase.

Rattray, Lord and Shanahan (2007) examined the adoption of target costing practices by New Zealand firms. The survey results indicate that target costing has been applied to existing products. The production department is fully involved in the application of costing practices, being the involvement of suppliers in the application of target costing considered very low and its use is associated with higher organizational performance.

Ax, Greve and Nilsson (2008) have found evidence that there is a positive relation between the adoption of target costing and the level of competition, though the effect is decreased as market uncertainty goes up. However, no direct influence of environment uncertainty on the implementation of target costing was observed.

Brito, Garcia, and Morgan (2008) verified whether the Brazilian automotive industries used target costing system for profit planning and whether this practice was consistent with the theory. According to the authors, it was observed that all firms analyzed in the study about the use of target costing, having as concern the market and their competitors, taking into account the desires of the consumers and how much the market is willing to pay for their products. In addition, it was also verified that all companies seek to plan their investments through target costing, conducting market research, life cycle estimates for new products, profit projections, etc., as well as aiming to apply target costing to the level of product components.

In their study, involving electronics and information companies located in China, Huang et al. (2012) point out that there is a positive relation between the implementation of target costing with innovations in the business model and organizational performance, being it moderated by the diversity of product development teams.

Hamood et al. (2013) studied the implementation of target costing in the Malaysian automotive industry. The evidence points to differences in the methods used by Malaysian firms to achieve target costing when compared to those used by the USA and Japanese companies. According to the authors, the differences were verified in the determination of price and the estimation of costs, having less influence of suppliers in the practices adopted, being the level of competition, the know-how of employees and the collaboration among departments the factors that most influence in the application of target costing.

Nascimento et al. (2013) investigated whether production decisions based on target costing added economic value to the organizations through a study of multiple cases on seven products from six wineries located in the São Francisco Valley. The results showed that the traditional target costing method allows the adoption of products that provide negative net present value, indicating the need for adjustment in the traditional methodology of target costing by including the cost of capital, thus avoiding the inefficient allocation of resources in projects whose net present value is negative.

On the other hand, Omar et al. (2015) examined the adoption of target costing and dynamic capabilities within companies located in Japan, Thailand and Malaysia. The results suggest that dynamic capabilities influence the equilibrium among target costing elements (cost reduction, quality, functionality and execution time), indicating that dynamic capabilities can aid the implementation of target costing.

Sharafoddin (2016) investigated the use of target costing and how it was implemented in Iran. The results suggest that successful implementation of target costing required identifying customer needs, competitive pricing, motivation and teamwork, value engineering, and activity-based costing.

Gonçalves, Gaio and Silva (2018) sought to analyze if some contingency factors (innovation, environment and organizational characteristics) were determining to the adoption of target costing in Portuguese companies. Evidence has pointed out that innovation and organizational capabilities positively affect the adoption of target costing, as well as that companies understand that they should consider the cost of capital when using target costing. It was also observed that the level of uncertainty negatively influences its implementation by the entities. In addition, it has been found that companies belonging to economic groups that are more focused on controlling production costs are more susceptible to use target costing.

Also, El-Dalahmeh (2018) attempted to identify the extent of implementation of target costing and value engineering to reduce the costs of Jordanian food companies. The results indicate that, based on the literature and on the studies mentioned herein, target costing is a strategic method of cost management that provides relevant information to the strategic management of the companies, leading them to adopt a cost evaluation from the market perspective to make themselves both competitive and profitable on the basis of continuous improvement.

3 METHODOLOGY

To reach the proposed objective, an exploratory research was carried out. This research can be considered exploratory because it aims to identify aspects of target costing that are applied by small businesses.

Exploratory studies are applicable when there is little knowledge about the subject to be investigated. According to Beuren (2013), an exploratory study is characterized by the endeavor to know about a subject that has not yet been deeply researched, in order to make it clearer, or to provide new evidence about it. According to Gil (2012), exploratory research aim to provide greater clarity and knowledge about the reality, as an attempt to make it more explicit.

According to Ferreira and Machado (2015), there are limited previous studies regarding the use of aspects of target costing within small businesses. In order to investigate the use of target costing principles in small companies, companies from the IT sector from Campina Grande/PB were considered. The relevance of this sector comes from the importance of the information technology sector for the city of Campina Grande-PB dates back to the beginning of the 1980s when the first Scientific and Technological Parks (PCT) were implemented in Brazil, with the municipality being one of the pioneers (Barreiro & Ramalho, 2016), leading the city to be recognized as one of the most advanced centers in computer program technology in Brazil (Bezerra et al., 2015). The implementation of the PCT in the city sought to encourage and support the creation of technology-based companies and the dissemination of technological and management information (Barreiro & Ramalho, 2016). With the installation of the PCT, the Campina Grande Technological Incubator, created in 1986, also took place, leveraging the emergence of innovative ventures through technical and managerial support in the business environment, including information and communication technology, electronics, biotechnology, among others (Barreiro & Ramalho, 2016).

According to Rudio (1998), the definition of the main aspects of a particular research, such as theme and scope, can be chosen due to intellectual curiosity or desire of expanding knowledge regarding a specific issue. Furthermore, Beuren (2013) points out that the conception of the research design derives from a creative process performed by the researchers.

Companies from the IT sector perform trade activities and also provide services in microelectronics, telecommunications, and computing. The universe of this research was composed of all

102 micro and small businesses from the IT sector which were registered in the Simplified Taxation System (Regime Simples Nacional) and with active status in the taxpayer registry of the Paraíba State Revenue Secretariat that operated in the city of Campina Grande – PB, in January of 2018.

To carry out this research, the following four groups of variables were considered: (i) respondent's profile (level of education, position and experience); (ii) company's profile (time in market, number of employees, and income); (iii) strategy (level of formalization, frequency of revision, level of detailing strategy, goals achievement, and usage of strategy for price definition); (iv) usage of target costing principles aspects (pricing definition, services to meet clients' needs, costs estimated before start activities, involvement of all employees in the process, cost management in all phases, joint work with business partners, continuous search of cost reduction).

For data collection, a questionnaire was used. According to Beuren (2013), the questionnaire is an instrument of data collection formed by an ordered set of questions that must be checked or answered in writing by the informant, without the intervention of the researcher. According to Gil (2012), the questionnaire can be considered a research procedure composed of a number of written questions presented to the subjects of the study, in order to know their opinions, expectations and situations experienced.

The used questionnaire was based on Dekker and Smitd (2003), Huang et al. (2012), Omar et al. (2015), Sharafoddin (2016), Gonçalves, Gaió and Silva (2018) e El-Dalahmeh (2018), being composed by both open and structured questions (multiple choices and ordinal scales. It was composed by four parts, each one focusing on a specific group of variables.

The questionnaire was sent by e-mail to all considered companies, and 14 of them provided the requested data, representing a response rate of 13.72% from the universe considered. The reliability of the questionnaire was tested by using the Cronbach Alpha test. According to Cronbach (1951), the alpha represents an index to measure the reliability of the internal consistency of a scale, being acceptable any index greater than 0.7. The result indicated that Alpha was 0.825, indicating that the instrument was reliable.

Descriptive statistics was used to provide information about the profile of respondents and companies, as well as aspects of their strategy and the adoption of target costing principles. Spearman correlation test was used to analyze the statistical significance of relations between the adoption of target costing principles and variables from the other three groups. The level of significance considered was 95% ($p=0.05$). Results analysis was carried out by SPSS 20 considering previous evidence presented in the literature (Dekker & Smitd, 2003; Rattray, Lord, & Shanahan, 2007; Ax, Greve, & Nilsson, 2008; Hamood et al., 2013; Gonçalves et al., 2018, El-Dalahmeh, 2018).

Limitations of this research should be highlighted: the small number of respondent companies; the composition of the sample formed mostly by service providers; the lack of evidence from previous research about the use of targeting costing within among small companies; the absence of previous research about target costing among IT companies; and the impossibility of considering more sophisticated statistical techniques to analyze the significance regarding the relations between variables.

4 RESULTS

Initially, data obtained from the individual companies investigated was used to present the characteristics from the four group of variables considered. The results relating to the The descriptive statistics of profile of respondents are presented in Table 1.

Table 1: Respondents profile

Description	Frequency	Percentage (%)
<i>Level of education</i>		
High School and lower	02	14.3
Graduation in progress	01	7.1
Graduation	09	64.3
Specialization	02	14.3
<i>Position</i>		
Others	02	14.3
Director	02	14.3
Partner	05	35.7
Owner	05	35.7
<i>Experience</i>		
Less than 5 years	01	7.1
Between 5 and 15 years	11	78.6
From 16 to 25 years old	01	7.10
Over 25 years	01	7.1

Source: Survey data.

The results presented in Table 1 indicate that a most of respondents is graduated or post-graduated. As regards the positions occupied by the respondents, it can be seen from the results presented in Table 1 that most of the respondents were owners and partners of the firms investigated, indicating that these people participate directly in the strategic decisions of these entities. This result resembles the ones reported by Rattray, Lord and Shanahan (2007) and Ax, Greve and Nilsson (2008), where most respondents in those studies were people directly involved in the business administration. In relation to experience of the research participants, the data presented in Table 1 indicate that the prevalence was between 5 and 15 years experienced, demonstrating that these professionals have some degree of expertise in the positions they occupy within the companies surveyed.

The second group of variables refers to the characteristics of the investigated companies. The descriptive statistics relating to these aspects are shown in Table 2.

Table 2: Profile of the companies surveyed

Description	Frequency	Percentage (%)
<i>Time in market</i>		
Less than 5 years	10	71.4
Between 5 and 10 years	01	7.1
Between 10 and 20 years	03	21.4
<i>Number of employees</i>		
Up to 9 employees	12	85.7
From 10 to 19 employees	01	7.1
From 20 to 49 employees	01	7.1
<i>Average annual revenue</i>		
Up to R\$ 60 thousand	05	35.7
From R\$ 60 thousand to R\$ 120 thousand	04	28.6
From R\$ 120 thousand to R\$ 360 thousand	03	21.4
More than R\$ 360 thousand	02	14.3

Source: Survey data.

The results suggest that most of the participating companies have less than 5 years of activity, have up to 9 (nine) employees and have an average annual income up to R\$ 120 thousand. This indicates that most of the organizations are relatively young, with reduced staff and revenues lesser than R\$ 120,000.00 per year.

After analyzing the profile of the respondents and the organizations surveyed, the following table shows the frequencies related to aspects of company strategy. The results are presented in Table 3.

Table 3: Business strategy aspects

Description	Frequency	Percentage (%)
<i>Degree of strategy formalization</i>		
Totally informal	1	7.10
Partially informal	2	14.3
Partially formalized	7	50.0
Totally formalized	4	28.6
<i>The strategy is constantly revised</i>		
Rarely	3	21.4
Sometimes	7	50.0
Always	4	28.6
<i>Strategy is detailed in specific objectives</i>		
Rarely	3	21.4
Sometimes	6	42.9
Always	5	35.7
<i>Strategic objectives are achieved through goals and plans aligned with the mission of the company</i>		
Rarely	1	7.1
Sometimes	9	64.3
Always	4	28.6

Source: Survey data.

The results presented in Table 3 indicate that most of the organizations screened have a partially or wholly formalized strategy, often having it reviewed and detailed into objectives, and most of the times presenting plans aligned with the company's mission. Such evidence indicates that organizations, despite being small-sized, endeavor to formalize their strategy, which is outlined with basis on objectives and plans adjusted to the mission of the entity.

The fourth group of variables were relating to the aspects of target cost principles were also organized. Results are presented in Table 4.

Table 4: Aspects of the principles associated with target costing used by companies

Description	Never	Little	Sometimes	Always	Total
Market-based price	-	3	4	7	14
Price based on cost	-	4	5	5	14
Products aimed to meet customer needs	-	1	2	11	14
Estimating costs before the process of production / service provision	-	2	5	7	14
Involvement of employees in the cost optimization	1	2	8	3	14
Management of costs from the choice of raw material	1	3	4	6	14
Establishment of partnerships to reduce costs	-	-	5	9	14
Continuous improvement	-	1	4	9	14

Source: Survey data.

The results show that the relative frequencies of the principles associated with target costing that are adopted by the entities surveyed, such as: price based on market conditions, price based on cost, products aimed to meet customer needs, estimation of costs prior to the production/service provision process, involvement of all employees in the cost optimization, management of cost from the choice of raw material, establishment of partnerships to reduce costs and continued improvement.

The evidence also indicates that most companies define the price of their products (services) based on market conditions, manufacture or provide services to meet the needs of customers, seek to estimate the costs of products (services) before the process of production and service delivery, manage their costs from the pick of raw material, attempt to establish partnerships with members of the value chain to reduce costs and the continuous improvement, but it is observed that employees are not always involved in the process of cost management.

These results suggest that most aspects related to the principles of target costing are used by micro and small enterprises, indicating that these organizations are attentive to the market conditions. This result can be explained by the performance of these organizations, since the technology sector is rather competitive, requiring companies to use more strategic cost management practices, such as target costing. According to Ax et al. (2008), Hamood et al. (2013) and Gonçalves et al. (2018), in environments where there is a greater level of competitiveness, companies tend to adopt target costing, aiming to meet customer needs as well as becoming competitive.

It should be noticed that most companies seek to trade products and services that meet the needs of customers, and 11 from the 14 companies stated that they apply this principle associated with target costing. This result corroborates that one reported by El-Dalahmeh (2018), in which about 85% of Jordanian companies are interested in meeting the clients' needs. With regard to the low participation of employees in the process of cost management, it can be said that this factor may occur due to the size of these entities, in which small business owners delegate less responsibility to their employees. It can be also observed that micro and small businesses use cost as the basis for pricing their products and services. This fact may occur because many firms still consider cost as the basis for pricing marketed goods and services.

Secondly, collected data was used to carry out Spearman correlation test. The obtained results regarding the relations between the profile of respondents and the aspects of target costing principles are presented in Table 5.

Table 5: Results of Spearman correlation test regarding the relations between the profile of respondents and the aspects of strategy

Description	Education	Position	Experience
Degree of strategy formalization	0.86**	0.03	-0.01
Review of strategy	0.13	0.07	0.45
Strategy detailed in specific objectives	0.17	0.42	0.42
Strategic goals accomplished by mission-aligned goals and plans	0.06	0.071**	-0.36

Source: Survey data.

Note: (**) significant at the level of 1%.

According to the results, it can be observed that the relations between the level of education and strategy formalization was statistically significant, indicating that the higher the education level of managers, the more formalized the organizational strategy. The relations between the position of respondents and strategic objectives accomplished by goals and plans in line with the company's mission were also statistically significant, suggesting that the role played by respondents could be related to the alignment of strategic objectives based on goals and plans adjusted to the mission of a business.

Spearman correlation test was also performed considering the profile of the investigated companies. The obtained results regarding the relations between these variables and the aspects of strategy are presented in Table 6.

Table 6: Results of Spearman correlation test regarding the relations between the profile of companies and the aspects of strategy

Description	Time in marketing	Number of Employees	Revenue
Degree of strategy formalization	0.41	0.27	0.51
Review of strategy	0.41	0.55*	0.05
Strategy detailed in specific objectives	0.32	0.49	0.21
Objectives accomplished by mission-aligned goals and plans	0.28	0.18	0.17

Source: Survey data.

Note: (*) significant at the level of 5%.

The evidence suggests that only the size of the companies, considering the number of employees, shows a positive relation with the review of strategy, indicating that the larger the functional structure of the firms, the greater the possibility of revising the organizational strategy.

The same statistical procedures were carried out considering the aspects of target costing. The results of Spearman Correlation test regarding the relations between the profile of respondents and the aspects of target costing principles can be found in Table 7.

Table 7: Results of Spearman correlation test regarding the relations between the profile of respondents and the aspects of target costing principles

Description	Education	Position	Experience
Market-based price	0.27	0.13	0.52
Cost-based price	0.29	0.65*	0.01
Products aimed to meet customer needs	0.05	0.30	0.76
Estimation of costs before the production / provision of services process	0.29	-0.09	0.16
Involvement of employees in cost optimization	-0.21	0.32	-0.03
Management of costs from the choice of raw material	0.23	-0.00	0.38
Establishing partnerships to reduce costs	-0.07	0.15	0.44
Continuous improvement	0.03	0.61*	0.13

Source: Survey data.

Note: (*) significant at the level of 5%.

The results show that statistically significant relations found regarding target cost aspects refer to the level of education with the use of market-based price and management of costs from suppliers of raw material. In addition, the position held by respondents presented statistically significant results with continuous improvement of products and services. These results suggest that the adoption of principles such as market-based pricing, cost management from the beginning of the production cycle and continuous improvement can be influenced by level of education and role played by respondents. The results also indicate that the position of the respondents has statistically significant relations with adopting cost as the basis for pricing products or services, suggesting that the role played in the company impacts on the pricing model adopted by those small enterprises.

Spearman correlation test was also performed considering the profile of the investigated companies. The obtained results regarding the relations between these variables and the aspects of target costing principles are presented in Table 8.

Table 8: Results of Spearman correlation test regarding the relations between the profile of companies and the aspects of target costing principles

Description	Time in marketing	Number of Employees	Revenue
Market-based price	0.04	0.38	-0.20
Cost-based price	0.30	0.23	0.30
Products aimed to meet customer needs	-0.05	-0.21	0.08
Estimation of costs before the production / provision of services process	0.05	0.08	-0.16
Involvement of employees in cost optimization	0.11	-0.06	0.18
Management of costs from the choice of raw material	0.06	0.18	-0.08
Establishing partnerships to reduce costs	-0.14	0.30	-0.15
Continuous improvement	0.14	0.30	0.41

Source: Survey data.

Note: (*) significant at the level of 5%.

The results indicate that there is no statistically significant relation between the profile companies and the application of elements associated to target costing. At last, Spearman Correlation tests were performed considering the analysis of significance of relations regarding aspects of strategy and aspects of target costing principles. The results are shown in Table 9.

Table 9: Results of Spearman correlation test regarding the relations between the aspects of strategy and aspects of target costing principles

Description	Degree of formalization	Review of strategy	Strategy detailed in goals	Goals and plans aligned with mission
Market-based price	0,23	0,50	0,71**	0,04
Cost-based price	0,36	0,22	0,44	0,60
Products aimed to meet customer needs	0,50	0,05	0,14	-0,08
Estimation of costs before the production / provision of services process	0,23	0,35	0,27	0,20
Involvement of employees in cost optimization	-0,04	0,32	0,47	0,66*
Management of costs from the choice of raw material	0,39	0,70**	0,57*	0,10
Establishing partnerships to reduce costs	-0,16	-0,12	0,16	0,04
Continuous improvement	0,13	0,28	0,75**	0,52

Source: Survey data.

Note: (**) significant at the level of 1%; (*) significant at the level of 5%.

According to the results, it can be observed that the relations between the detailing of strategy into goals had statistically significant results relating to three of the tested aspects of targeting costing (market-based price, cost management from raw materials and continuous improvement). The review of strategy also had statistically significant relations with cost management from raw materials. The involvement of employees in cost optimization is significantly related to the alignment of goals and plans with the mission of companies. These results indicate that several aspects of strategy are related to target costing aspects among the investigated companies.

Summarizing the results found it can be said that, alike medium and large companies, as pointed out by Dekker and Smitd (2003) and El-Dalahmeh (2018), among others, small enterprises also use aspects related to target costing, also being possible to state that the profile characteristics of managers such as age, training and the position occupied can explain the adoption of target costing principles by the companies analyzed.

5 CONCLUSIONS

The objective of this research was to investigate the use of aspects regarding target costing in the management of costs in micro and small companies from the IT sector in the city of Campina Grande – PB. In order to accomplish this objective, an exploratory research was carried out considering data regarding the profile of respondents, the profile of companies, companies' strategies, and target costing obtained by the application of a structured questionnaire and considering Spearman correlation test to identify the presence of statistically significant relations among them.

Three key issues can be identified from the findings. The first key issue refers to the relevance of the business environment regarding the use intensity of aspects of target costing principles. The aspects that presented the highest frequency of use declared are related to the business environment of the investigated. Products aimed to meet customer needs and continuous improvement are market orientated and consider clients behavior as a key factor in the target costing process. The establishment of partnerships to reduce costs is also market orientated, and aim on the relations of the investigated companies with their business partners.

The second key issue also refers to the role played by the business environment regarding the use of aspects of target costing principles among the investigated companies. Three aspects of target costing principles presented statistically significant results with the presence of strategies detailed in goals (market-based price, management of costs from the choice of raw material and continuous improvement).

The third key issue is related to the absence of statistically relations between the profile of the investigated companies and the use of aspects of target costing principles. The lack of statistically significant results indicates the presence of isomorphic behavior among these companies. This is due to the nature of business relations (networks/clusters) among individual companies within the sector that allow them to form business alliances and look for opportunities to share assets and business channels in search of cost reduction.

Two main contributions to the literature can be highlighted. The first contribution derives from the role of the characteristics of the business environment in which micro and small companies do business in the use of target costing principles. Market-orientated networks of micro and small companies may be able to use target costing principles successfully by joining efforts. The second contribution to the literature refers to the capability of micro and small companies to be able to translate strategy into specific objectives even without strategy formalization.

Future studies considering micro and small companies from other sectors may provide further understanding about the role of business environment in use of target costing principles, as well as assessing the relation between the adoption of these principles and contingency factors. In addition, qualitative research, such as case studies, may explore more specific aspects that could explain the use of target costing principles by micro and small companies.

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