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Target costing and innovation-exploratory configurations: A comparison of fsQCA, multivariate regression, and variable cluster analysis☆

Tiago Gonçalves[a,*], Cristina Gaio[a], Mariana Silva[b]

[a] Advance/CSG, ISEG, Lisbon School of Economics & Management, Universidade de Lisboa, Portugal
[b] ISEG, Lisbon School of Economics & Management, Universidade de Lisboa, Portugal

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ABSTRACT

In this paper, we use the contingency theory to analyze the relation between innovation and environmental and organizational determinants in adopting target costing (TC). We collect data from a survey of the 500 largest Portuguese firms in 2015. The results show multiple configurations of TC adopters. The analysis extends the research by showing that previously tested determinants (competitiveness, environment, uncertainty, and innovation) are neither sufficient nor necessary factors. The multiple configurations also show the effect of economic group affiliation (and its pressures) and a focus on production cost control rather than product development costs. Methodologically, this paper contributes to the complexity theory by addressing results from a multivariate regression and a fuzzy-set qualitative comparative analysis (fsQCA). The results are robust to non-Boolean variable clustering.

1. Introduction

Firms face increasing global economic competition, and reducing costs is not enough to sustain competitive advantages. Along with increasing pressure to hold costs down, customers require products that meet their needs in terms of quality, functionality, and price; whereas shareholders require profitability that reflects their risk. In this setting, strategic cost management tools play a paramount role in aligning cost management with strategy (Baker, 1995; Cooper & Slagmulder, 1999).

In this paper, we investigate two related strands of literature that to the best of our knowledge have never been analyzed together: the determinants and perceived consequences of adopting different strategic cost management tools and their role in innovation. We focus primarily on the tools that managers perceive are associated with product and service innovation—target costing (TC).

The literature shows that management accounting tools are associated with the increased flexibility necessary to respond to changes (e.g., Nixon & Burns, 2012). But, Chenhall and Moers (2015) argue that accounting systems move from simple planning and control tools to more complex innovation-oriented systems. However, the empirical evidence shows that many organizations still do not use strategic cost management (Nixon & Burns, 2012). Several papers identify a gap between the academic consensus on the definition and suitability of these tools and their business-cycle applications by managers (Juras, 2014; Nixon & Burns, 2012). Consequently, our research question focuses on the determinants of the adoption of TC and, in particular, any configurational differences that justify the aforementioned mixed results.

We collect our data by surveying the 500 largest Portuguese firms in 2015. Our measurement scale is adapted from previous studies (Afonso, Nunes, Paisana, & Braga, 2008; Garg, Ghosh, Hudick, & Nowacki, 2003; Juras, 2014). The data reflects roughly a 20% answer rate.

We use a multivariate regression analysis to analyze the determinants of adoption and then run a fuzzy-set qualitative comparative analysis (fsQCA) to analyze the perceived and intended consequences. Based on new products launched in the past three years, we find evidence for the importance of innovation (measured by new products launched in the past three year (Bisbe & Otley, 2004)), along with the economic group affiliation as fundamental reasons to pursue strategic cost management. The results also show that cost control and cost information are relevant perceived consequences, whereas a strategy's definition seems to be perceived as less of a consequence even when taking into consideration innovation.

The fsQCA shows both the asymmetric configuration of adopters and non-adopters and the strategic association between cost management tools and innovation-oriented framing (development costs focus vs production cost focus). Firms that adopt innovation-oriented TC do so by considering the implications beyond the academic scope of TC. Conversely, the proclaimed adopters of TC claim a focus on production

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* Corresponding author at: ISEG, Rua Miguel Lupi 20, 1249-078 Lisboa, Portugal.
E-mail address: tiago@iseg.ulisboa.pt (T. Gonçalves).

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costs that indicates their misperception of the tool and its intended effects. The results are robust to variable clustering.

This study contributes to the literature by addressing organizational capabilities and competitive pressure as determinants of TC adoption to facilitate innovation. We extend this research by robustly providing evidence that these are sufficient conditions but not necessary ones. In fact, we find configurational evidence of other contingent factors, such as group affiliation and production costs that lead to TC adoption. We also contribute to the literature by analyzing the intensity of the use of TC features.

The reminder of the paper is organized as follows: Section 2 provides the conceptual framework and the propositions. In Section 3, we explain the research method and the procedure for the data collection. Section 4 presents the results. Section 5 highlights the main findings, the contribution of the study, and some implications from the findings.

2. Conceptual framework and propositions

According to the contingency theory, managers should enhance organizational flexibility to face different contingencies in order to obtain acceptable performance. Contingency studies attempt to determine the most appropriate technique for a specific organization with their specific contingencies (Chenhall, 2006; Otley, 2016). Firms face increasing global competition and reducing costs is no longer enough to sustain competitive advantage. To face this type of continuous pressure, firms perceive innovation as a way to respond to market changes and demands to gain a competitive advantage (Damanpour & Gopalakrishnan, 2001; Walker, 2006). Consequently, the main objective of product or service innovation is to help the firm achieve short- and long-term viability (Roberts & Amit, 2003). According to the OECD (2005), product innovation consists of the introduction of a new product to the market or the introduction of a new version of a previous product with major exchanges.

Nowadays, customers have a wide range of high-quality products available at reduced prices that has led to increasingly focused market production and profound changes in firms' operational strategies. Target costing recognizes the market value of the product and allows product development that takes into consideration demand and functionality constraints while seeking to eliminate waste (Monden & Hamada, 1991; Zengin & Ada, 2010). This strategic cost management tool, developed in Japan, has a key rule—a product only moves to production if the estimated costs are lower than or equal to its calculated target cost (Kee, 2010). In short, TC is a method of reverse costing (Dekker & Smidt, 2003) that identifies improved production efficiency as well as the activities that do not add value and, therefore, must be removed (Baker, 1995).

In fact, TC is a proactive and interactive system of planning a firm's profitability and cost management that ensures the success of new products and services in terms of market acceptance and financial return (Ansari, Swenson, & Bell, 2006; Gopalakrishnan, Libby, Samuels, & Swenson, 2015). Thus, the adoption of TC as well as the intensity of the use of its features should be related to innovation. Thus, Proposition 1 is:

Proposition 1. TC adoption and the intensity of its use is directly associated with product and service innovation.

Although the essential propositions of TC are quite straightforward, in reality it is a very complex and multifaceted process (Ansari et al., 2006). In this process, the selling price depends on the market price after considering the customers and competing products. The applicable profit margin depends, in turn, on the firm's strategy, shareholders' expectations, and stakeholders' demands (Zengin & Ada, 2010). Indeed, according to Kee and Matherly (2006), most firms still use cost-based product development and pricing. Firms calculate the costs associated with the development and production of products and then add a profit margin to it. Consequently, they face the risk that the resulting price is higher than the value to the market, which leads to low demand and lower profits than those initially estimated.

Ax, Greve, and Nilsson (2008) argue that there is little evidence regarding the factors that influence the adoption of TC. However, several studies exist that list the characteristics associated with firms adopting TC (Afonso et al., 2008, Burrows & Chenhall, 2012; Dekker & Smidt, 2003; Gopalakrishnan et al., 2015, Mijovc, Pekanov Starvcevic, & Mijovc, 2014; Zengin & Ada, 2010). Most authors agree that TC is mainly used by large firms with an extensive value chain that operate in environments with high perceived uncertainty; where competition is fierce and products have a relatively short life cycle, but yet have great added value; and products are purchased by sophisticated customers that can identify the quality difference of each product. Conversely, Ax et al. (2008) argue that the perceived environmental uncertainty negatively moderates TC adoption in increasingly competitive environments. The authors believe that TC requires reliable market data that can only be attainable in moderate to low uncertainty settings. These results lead to the following propositions:

Proposition 2. An increasingly competitive environment is directly associated with TC adoption and the intensity of its use.

Proposition 3. The increasingly perceived uncertainty of the environment is associated with TC adoption and the intensity of its use. The direction of the association is unknown.

Hamood (2016) further adds two determinants: top management values, since a more conservative management tends to choose more traditional techniques; and firms' organizational strategies where the firms that face competition or cost leadership strategies are more likely to adopt TC. In organizational terms, Hamood (2016) also highlights the firms' size, since a greater availability of resources leads to successful implementation. Summarizing the research, we formulate the following proposition:

Proposition 4. Organizational capabilities (such as management commitment and production/development focus) are directly associated with TC adoption and the intensity of its use.

One of the major limitations of TC according to Kee (2010) is that production-related decisions do not account for the cost of capital. Therefore, TC frequently underestimates investment costs and overestimates costs related to production resources, which can lead to an acceptance of products with negative net present values (NPVs) and the rejection of products with positive NPVs. The following proposition emerges:

Proposition 5. TC adopters incorrectly cost capital in their target costing analysis.

Duck (1971) concludes that certain firms claim to use costing techniques but, in fact, are applying a system adapted to the organization. Furthermore, Dekker and Smidt (2003) identify several German manufacturing firms that use cost techniques very similar to TC without knowing the concept behind the technique. This finding indicates that firms have poor knowledge of the real concept of the technique in question. The academic community knows these gaps and studies such as Adler, Everett, and Waldron (2000), Nixon and Burns (2012), and Juras (2014) address them.

On the other hand, Afonso et al. (2008) have a different view of TC—the focus on the product as well as its components—and find evidence of asymmetric effects from TC on new product development. This evidence relates to Ellram (2006) who finds different TC foci in American and Japanese firms. The US firms focus on supply chain management for cost control and new product development whereas the Japanese center their attention on market inputs. We argue that firms act as subsidiaries for multinational groups and undertake TC as part of the supply chain but miss other features such as market orientation. Hence, Proposition 6 is: