



Target Costing: A Systematic Review

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ABSTRACT:

The aim of this study is to systematically organize previous research on target costing in enterprises, compile statistics and evaluations according to various authors, and identify the most influential studies in the field. Research data was collected and analyzed from Google Scholar using VOSviewer 1.6.19 software, with 500 articles filtered for the keyword "target costing" in abstract form. The findings reveal that target costing has remained a topic of keen interest among researchers over the past decade. The study also highlights the most influential authors in terms of the number of publications and citations. This research contributes to the comprehensive synthesis of the literature on target costing.

Keywords: cost management, target costing, Vios viewer

1. Introduction

Melo, R. S., Granja, A. D., & Ballard, G. (2013) have researched collaboration to extend target costing to non-multi-party contracted projects: Evidence from the literature. This paper attempts to address this gap in the TVD literature by conducting a systematic mapping study to shed some light on future TVD research. Following an evidence-based approach, we seek to answer the following research question: Which research topics have been covered for promoting collaboration among key project stakeholders (owner, architect, engineers, contractor, and subcontractors) when their incentives are not aligned through multi-party contracts? The selected papers are classified with respect to the common research subjects. Out of our sample of 47 papers, the most common categories of research subjects are: project partnering, incentive systems, and public-private partnerships. These three categories can be considered evidence clusters, and the remaining categories (cooperative procurement, social network analysis, trust, and project alliancing) can be considered scarce evidence. We discuss these categories and suggest future research directions to overcome the potential barriers to TVD application in construction.

Briciu, S., and Căpușneanu, S. (2013) have researched the pros and cons of the implementation of the target costing method in Romanian economic entities. The article looks at the pros and cons of the implementation of the Target Costing method in Romanian household appliance manufacturing entities based on its specific principles. Based on recent results obtained by experts in this field and taking into account the specific aspects of Romanian economic entities, among the topic's pursued objectives, we enumerate the following: analysis of critical implementation or non-implementation factors related to the Target Costing method and their impact on a company's internal and competitive environment. The authors' conclusions on this topic highlight the most important arguments for implementing and adapting the Target Costing method in Romanian household appliance manufacturing entities due to its long-term benefits. The benefits of the target costing method are reflected in the results of a practical case study conducted in a company acting in this field.

Al-Qady, M., and El-Helbawy, S. (2016) have researched integrating target costing and resource consumption accounting. This paper proposes integrating resource consumption accounting (RCA) with target costing to improve the target costing process. Target costing has the ability to work in a feedforward mode in the design stage, while RCA can be run in reverse to assess the future demand on resource pools' output. The integration of target costing and RCA would help determine estimated costs more accurately, provide cost structures for design alternatives, and thus achieve the target cost.

Al-Hashimi, A., and Al-Ardawe, A. (2020) have researched Implementing Target Costing within the Supply Chain to Lean Costs: A Case Study in Najaf Cement Factory. This research aims to apply the concepts of the target cost and the supply chain as tools to analyze and lean the cost of activities in the Najaf Cement Factory, where the traditional cost accounting system applied in the factory is no longer able to provide the appropriate information for management to make needed decisions to enhance customer satisfaction in light of the competition from domestic and imported products. The research included a discussion of the literature on related concepts about how to use the target cost within the supply chain to reduce costs and drawing up a basis for conducting the applied study based on the data of Najaf Cement Factory as a case study of the cement factories in Iraq under competition among them. Because of the case study, the factory faces the problem of the high price compared with similar products in the local market and seeks to reduce costs and achieve efficiency and effectiveness in using its resources. The most important results of the research are that Iraqi industrial companies should

abandon the traditional system and the total cost method in their costing and begin to implement the target cost within their supply chain activities to reduce product costs and achieve customer satisfaction in light of competition.

Therefore, this study enables readers to grasp the evolution and quality of information on target costs through the frequency of keyword usage, the number of citations, and how often authors are cited over time. It also helps future researchers understand the trends in this topic as time progresses.

2. Theoretical foundation

The target costing method originated in Japan. This method has been applied since 1980 by large companies such as Toyota, NEC, Sony, and Nissan. An international organization established by a number of large industrial corporations, called the Consortium for Advanced Management-International (CAM-I), develops modern management accounting methods defined on target costing as follows: "The target costing method is the totality of methods and management tools that allow achieving cost goals and operational goals at the product design and planning stage. The method also allows to provide a basis for control at the production stage and ensures that these products achieve defined profit targets in accordance with the product life cycle." [\[1\]](#)

Takao Tanaka in 1993, target costing is all about the efforts made during the planning and production stages of a product's lifecycle to hit predetermined cost and profit goals. Essentially, it's a profit-planning and cost-management method mainly used for products with unique manufacturing processes. The aim of target costing is to zero in on planning the costs of producing a product during the research, design, and development phases rather than scrambling to slash costs during production. So, this approach kicks off by pinpointing the maximum cost for a new product and then moves on to roll out a prototype design that can maximize profits within that cost ceiling. This is what sets it apart from traditional cost determination methods.

Steps to determine target costs

Step 1: Describe the expected characteristics of the product or service.

Introduce the concept of the new product. Identify its competitive edge. From there, the organization can recognize opportunities and challenges.

Establish the importance of each feature and component of the new product.

The data for construction is sourced from market research, competitors, and internal databases.

In American manufacturing companies, when researching the market for new products, marketing data is exchanged with suppliers, designers, and R&D.

The supply chain management function should be integrated at the earliest stage of the target costing process.

Step 2: Establish the target selling price.

In this step, the target selling price is set while simultaneously deciding on the product features based on market research.

In some organizations, the marketing or sales department can negotiate the sales price while also deciding on the specific features of the product for certain major industrial clients.

In the US, large industrial customers can set target prices for manufacturing companies.

Step 3: Determine the overall target cost of the product.

Determining the target cost is essential for product manufacturing. Before launching a product or service into the market, senior managers must agree on a strategy for the new product, including the target selling price, planned profit, and target cost. During this phase, supply chain management will continue to work with suppliers while also reviewing machinery, costs, and proposed pricing.

The practical methods of establishing target costs are:

Target cost = estimated selling price minus desired profit.

Desired profit is the required profit margin commitment by businesses, which is part of the strategic planning process.

Step 4: Proceed with identifying the target cost for each detailed component.

Break down the overall target cost into a tree diagram format.

Target costs are detailed and associated with each cost group (market research, production, manufacturing, distribution, and sales).

Internal data sources and external data sources.

Based on the varying importance of each feature and product component established in step 1, the target cost allocated to each part is proportional to its significance.

The analysis and determination of the target cost for each component are conducted through group work methods.

Step 5: Cost management activities

The responsibility for implementing target cost management activities lies with the groups, involving supplier participation.

The cost management process should identify product components that are either too expensive or too cheap compared to the importance established in step 1. Subsequently, measures should be taken to reduce or adjust costs to align with the product's significance.

Step 6: Continue to improve.

Once a business achieves its target cost, the next step involves introducing new products to the market.

The moment to launch a new product after achieving the target cost.

Approaches to control and adjust target costs when changes occur.

The supply manager plays a pivotal role in continuing cost management efforts, picking up where the target cost teams left off.

3. Research methodology.

The author synthesizes previously published overview materials related to target costing from data sources on Google Scholar. These overview studies aim to highlight the urgency of the research and identify gaps in existing studies.

The author utilized VOSviewer software version 1.6.19 to filter data using the keyword "target costing" selected from summaries in the Google Scholar database, accessed on October 30, 2023. The search yielded 377 relevant articles out of a shortlist of 500. The collected data aims to be used for analyzing and addressing the following research questions:

Q1: What has been the research on target costing from 2013 up until October 2023?

Q2: Who are the most influential authors in terms of the number of articles and citations in publications on target costing in businesses?

Q3: What themes do the chosen keywords create?

4. Results

Publications statistics on target costs

From 2013 to 2023, the author group, while searching with a maximum cap of 500 articles, found 377 papers on target costing indexed in Google Scholar. The group excluded books and citations. On average, 37.7 papers were published each year, highlighting that the issue of target costing remains a hot topic among researchers today.

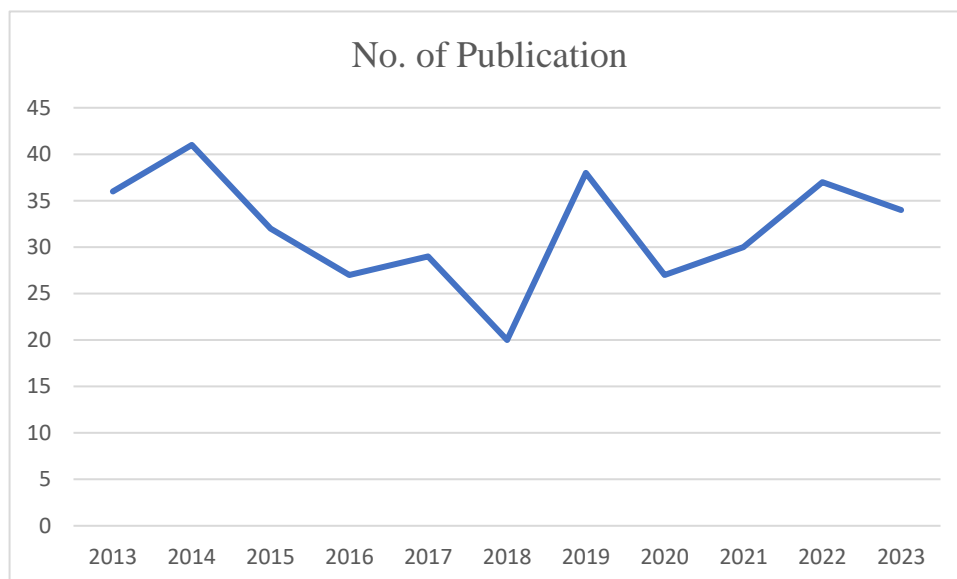


Figure 1. Chart showing the number of studies over the years

Statistics on the most influential authors in target cost research

To assess the most influential authors in target costing research, we looked at the number of citations per article (Table 1), the total number of articles by each author (Table 2, Figure 2), and the total number of citations per author (Table 3).

Highest citation, according to the document.

Table 1 reveals that the article by J Malue's team (2013), "Analisis Penerapan Target Costing Sebagai Sistem Pengendalian Biaya Produksi Pada PT Celebes Mina Pratama," holds the record for the most citations at 64, followed by E Di Giuseppe, M Iannaccone, M Telloni, M D'Orazio...(2017), "Probabilistic life cycle costing of existing buildings retrofit interventions towards nZE target: methodology and application example" with 57 citations. TC Caroline, HRN Wokas (2016), "Analisis Penerapan Target Costing dan Activity-Based Costing Sebagai Alat Bantu Manajemen Dalam Pengendalian Biaya Produksi Pada UD. Bogor Bakery" received 47 citations. All other articles have been cited over 30 times each.

Table 1. Frequency of the highest citation by documents

Documents	Cites
J Malue (2013)	64
E Di Giuseppe, M Iannaccone, M Telloni, M D'Orazio...(2017)	57
TC Caroline, HRN Wokas (2016)	47
FM Longdong (2016)	46
RS Melo, AD Granja, G Ballard (2013)	43
H Ahn, M Clermont, S Schwetschke (2018)	43
T Gonçalves, C Gaio, M Silva (2018)	39
S Briciu, S Căpușneanu (2013)	38
S Bock, M Pýtz (2017)	37
EG Anugerah, NI Wahyuni, I Mas' ud (2017)	36
R Juwita, MR Satria (2017)	34
HP Gerungan (2013)	32
M Al-Qady, S El-Helbawy (2016)	31
S Sharafoddin (2016)	31

(Source: Authors compiled from VOSviewer software)

The highest documents by authors

Table 2. Frequency of the highest documents by authors

Selected	Author	Documents
<input checked="" type="checkbox"/>	omar, n	14
<input checked="" type="checkbox"/>	sulaiman, s	10
<input checked="" type="checkbox"/>	sharaf-addin, hh	6
<input checked="" type="checkbox"/>	granja, ad	5
<input checked="" type="checkbox"/>	kozuch, aj	5
<input checked="" type="checkbox"/>	tasaka, k	6

(Source: Authors compiled from VOSviewer software)

Omar, N, tops the list with 14 articles on target costing, followed by Sulaiman, S, with 10 articles, while other authors range from 5 to 6 articles.

Co-author analysis.

To understand the collaboration trends in research on internal transfer pricing methods, this study conducted an analysis of co-authorship relations among individual authors. According to Benoit and colleagues (2018), the results of the analysis enhance our understanding of research collaboration and also help identify influential researchers. Figure 1 presents a co-authorship network map. The link between two nodes represents a collaborative relationship between two authors, and the thickness of the link symbolizes the intensity of the collaboration. The tightest-knit group of authors is represented in the figure below. This group has consistently published numerous articles together over several years.

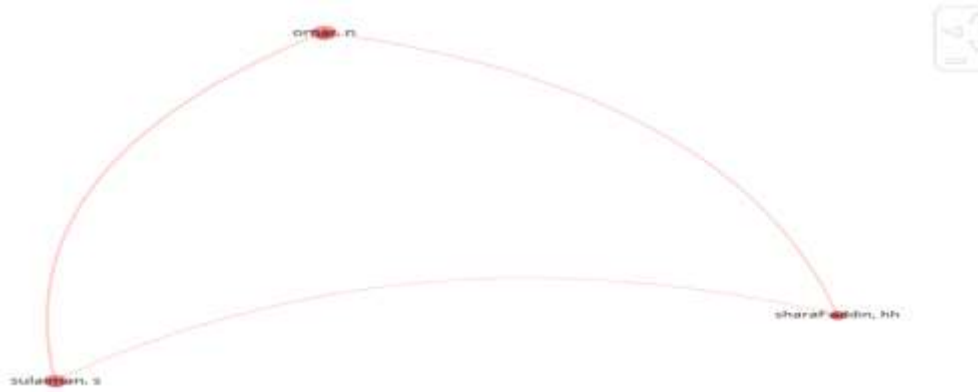


Figure 2: Co-author

The highest citation by authors

We've identified the top 10 most-cited authors (Table 3). S Kumar, N Pandey, WM Lim, AN Chatterjee... lead the pack with a whopping 80 citations this year, followed closely by RB Davies, J Martin, M Parenti... with 77 citations, and J Monsenego stands out with 54 citations. The remaining authors each have over 20 citations to their names.

Table 3. Frequency of the highest citations by authors

Authors	CitesPerYear
J Malue (2013)	10
E Di Giuseppe, M Iannaccone, M Telloni, M D'Orazio...(2017)	10
TC Caroline, HRN Wokas (2016)	9.5
FM Longdong (2016)	9
RS Melo, AD Granja, G Ballard (2013)	8.6
H Ahn, M Clermont, S Schwetschke (2018)	8.2
T Gonçovalves, C Gaio, M Silva (2018)	8
S Briciu, S Căpușneanu (2013)	7.5
S Bock, M Pýtzt (2017)	7.5
EG Anugerah, NI Wahyuni, I Mas' ud (2017)	6.71
R Juwita, MR Satria (2017)	6.57
HP Gerungan (2013)	6.4
M Al-Qady, S El-Helbawy (2016)	6.33
S Sharafoddin (2016)	6.17
ET Johan	6
G Ballard, A Pennanen	6

(Source: Authors compiled from VOSviewer software)

Results from keyword analysis

In the keyword analysis section, we focus on selecting keywords that appear 20 times or more. The software evaluates these keywords based on their frequency and the overall strength of their associations. The results of the keyword analysis can be exported as an image file. Here's what the keyword analysis looks like:

