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ADOPTION OF TARGET COSTING IN DIVERSE INDUSTRIES: A QUALITATIVE STUDY

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ABSTRACT

Article History

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Keywords

Target costing Adoption Literature Manufacturing Construction Automotive. The motive of this paper is to review the articles and research papers regarding the adoption of target costing in different sectors and examines several findings and gaps in the existing literature. This paper reviews existing literature from some renowned journals, official associations and published researches from various timelines. Review of eighteen-journal paper related to target costing is included in this paper. Implication of target costing is the main point of the papers, which is included. Target costing is a popular concept, which is proved to bring better result if applied in the earlier design stages and if firms have a good coordination among their various departments. The papers mostly tested manufacturing firms and construction firms. The findings of the paper suggest that most of the companies do not consider any particular policy for target costing even though these are from same type of industries. Target costing related papers are hard to find in Bangladesh and this paper attempts to give an overall review on the major findings from its adoption. It discovers some gaps in the current existing literature and requires further researches on its application on various other industries.

Contribution/Originality: This study is one of the very few studies, which have investigated adoption of target costing in various industries throughout the world. This paper's primary contribution is to find out scarcity of studies about target costing and necessity of the particular topic to be investigated.

1. INTRODUCTION

The ever-changing constant technological changes and intense global competition made the manufacturers all over the world to bring modifications in their production processes and systems. The costing method enables the manufacturers to engineer their production practices in a way that would ultimately help them gain a competitive edge in the respective markets they operate. The earlier emphasis on optimizing the production was minimizing the costs alone in whatever means possible. However, this costing method suggests that in addition to reducing costs, the manufacturers should try to develop multifunctional products, to maintain a high quality, and to shorten their delivery times. This concept was first established by the Japanese companies as a control system in the production procedure. Target costing allows the development of a new product by targeting its cost rather than targeting a selling price. Moreover, it aids in satisfying the customer demands even during uncertain circumstances. Soon after

its application in Japanese companies indicated to have favorable results, the companies in countries such as China, Malaysia and India started adopting it as well.

A firm might be able to survive in a competitive and fierce market through innovations in their products and competing with the rivals in essential elements such as cost, quality, and functionality. Target costing allows a firm to make clever trade-offs among such components so that the customers can receive only the products that they require and at the same time, the firms can reach to their desired profitability. In the past, the firms would have gained significant profitable benefit by bringing a product for the first time. But, this is not the case in the presents as the other firms in the industry can easily imitate the products in a very quick manner which reduces the targeted profit. Now, if the firms can properly utilize target costing, they can launch a better version of the previous products with reduced selling prices, and better functionality and quality.

This proactive practice of planning, managing, and reducing of costs are usually implemented during the design and development stages of the product instead of the latter stages of production and development. The brand-new products and the modified succeeding version of previous products are mainly focused in target costing. It is believed that once a product gets into the production process, the costs are not that easy to be minimized. Unlike the progressive countries like Japan, United Kingdom, and Australia where several papers are being continuously published based on how well their firms have adopted target costing, the academics of developing countries are not putting effort to conduct studies and spread awareness on this crucial costing method.

Target costing is used in need of target profit. Moreover, companies want to maximize their profit to compete with the competitors. But in a competitive market, price of product depends on the competitive products. Having company's determined profit figure, companies need to use target costing. Usage of target costing is not as easy as usage of other costing method. There are different studies regarding the implementation of target costing to find out the best possible way. Target costing is used in construction business, automotive company, and global outsourcing. This research refers literature review of journal articles related to implementation of target costing. Traditional costing system is less impressive than target costing. Target costing determines the maximum cost amount of a product that could be imposed on a product; however, company can earn their required margin from that product. The exceptional rule of this method is not to exceed its total cost. This process helps to find out life cycle cost of a product. This cost helps to find out quality of the product and functionality of specific side. Desired profit margin could be gained after cutting down its target cost with the best use of target costing. This research reviews some literature about implementation of target costing to understand the success factors of target costing.

2. THE REVIEW METHOD

A qualitative approach was adopted to conduct this paper. A total of 18 articles written by renowned authors from various journals were selected to assess. It mainly focused on the topic of 'Target costing' and the papers were collected from the online platform where these articles were published. Table 1 shows the journal articles and their crucial findings whereas Table 2 indicates the journals in which the articles were published.

No.	Study	Торіс	Findings
1		Managerial Implications of Target Costing	The research finds target costing to be more time intensive than the traditional methods of cost-based pricing, but manufacturers can be assured prices will be in line with customer expectations. Time was also found to be needed to bring all costs throughout the supply chain to acceptable levels.
2	Jacomit, Granja, and Picchi (2008)	Research Analysis: Reflections for	It was found that none of the three implications reviewed, represented complete adoption of the given framework. Some issues like- Market price determination, Target and production cost breakdown,

Table-1. Review of journal articles on target costing.

		implementation	Life-cycle costing strategy in the target costing context, Supply-chain integration considering (or not) bid situation, Target cost contracts and Combined application of target and kaizen costing needed further development.
3	Huh, Yook, and Kim (2008)	Relationship between organizational capabilities and performance of target costing: An empirical study of Japanese Companies	Dynamic capabilities, such as architectural and process capabilities, are more important in implementing target costing than local capabilities even though they are necessary. The Study shows that the dynamic capabilities of target costing are more influential success factors than tools and techniques.
4	Jayeola and Onou (2014)	Implementing Target Costing in Small and Medium Scale Enterprises in Ogun Industrial Metropolis	There was a statistically significant relationship between target costing technique and annual turnover in Ogun industrial metropolis and also between profitability of small and medium scale enterprises in the Metropolis.
5	Monden and Hamada (1991)	Target costing and Kaizen costing in Japanese Automobile companies	In this paper they have considered a total cost management system which includes product development and design activities as well as manufacturing activities. That is they have considered the features of target costing and Kaizen costing that are the two important factors in the total cost management system.
6	Lockamy and Smith (2000)	Target costing for supply chain management: Criteria and selection	This article examines the use of target costing as a means to improve the management of supply chains. Customer requirements and supply chain relationships are identified as key criteria for selecting the most appropriate method of target costing for supply chains.
7	Ellram (2000)	Purchasing and Supply Management's Participation in the Target Costing Process	This paper says that using target costing help to have positive way for PSM to get organizational success and can develop the product and services.
8	Zengin and Ada (2009)	Cost management through product design: target costing approach	This paper emphasizes the role of target costing to manage the cost of products while product development in small and medium enterprises
9	Huang, Lai, Kao, and Chen (2012)	Target Costing, Business Model Innovation and Firm Performance: An Empirical Analysis of Chinese Firms	This paper shows that using target costing was positively interacted with the firm performance and business model innovations.
10	Jacomit and Granja (2011)	An Investigation into the Adoption of Target Costing on Brazilian Public Social Housing Projects	Paper shows more efficient ways of developing products in construction & target costing could be more successful in a social housing project (SHP) context. However, the target costing framework and propositions about the relationship between target costing and SHP characteristics can be generalized to other construction products since they possess one or more of those characteristics.
11	Hibbets, Albright, and Funk (2003)	The Competitive Environment and Strategy of Target Costing Implementers: Evidence from The Field	This paper shows competitive environment and strategy of firms that have been identified as implementers of target costing to determine whether specific environmental forces coupled with firm strategy can be traced to a firm's decision to adopt the cost management tool.
12	Robert and Granja (2006)	Target and Kaizen costing implementation in construction	This research shows a combined target and kaizen costing approach has been recognized as a promising strategy for construction companies to increase their profit margins, efficacy of production process and relationship with suppliers.
13	Yazdifar and	A comparative study of	Target costing is popular in both the manufacturing and

	Askarany (2011)	the adoption and implementation of target costing in the UK, Australia, and New Zealand	service sectors equally. But its implementation significantly varies between the sectors. Firms are taking strategies to reduce costs during planning stage instead of production stage. Firms also incorporate value engineering in order to fulfill the customer needs.
14	Ballard (2006)	Rethinking Project Definition in terms of target costing	The case studies on the healthcare construction projects revealed that they lack expertise on the analysis of capital projects, even though it is vital in its cost and financial returns. It suggests emphasizing more on costs rather than prices.
15	Ax, Greve, and Nilsson (2008)	The impact of competition and uncertainty on the adoption of target costing	It indicated that the level of competition has a positive relationship with adoption of target costing, however, its impact decreases with an increasing perceived environmental uncertainty. No evidence was found for any relationship among perceived environmental uncertainty and the adoption of target costing.
16	Sani and Allahverdizadeh (2012)	Target and Kaizen Costing	There are different types of options for the managers to use like ABC, target costing, kaizen costing, throughput costing etc. But target costing is being nominated as the best system to maximize the profit. This is the best way to capture the market efficiently and get the best profit margin.
17	Ibusuki and Kaminski (2007)	Product development process with focus on value engineering and target-costing: A case study in an automotive company automotive company was suggested. It has approached to give a corrective system to Value Engineering and Target costing. It suggested target costing as the most effective plan for the long-term cost management and making long term profit in need of customer and company's strategy with a case.	
18	Rattray, Lord, and Shanahan (2007)	Target costing in New Zealand manufacturing firms	12 out of 31 companies studied use target costing. Target costing is being applied to the existing products. Manufacturing industries are highly interested in target costing where suppliers using rate is comparatively low. Using target costing gives the companies more benefit and more firm performance.

Table-2. Names of the journal.

Journal Name	No. of Papers	
Competitiveness Review	1	
Proceedings for the 16th Annual Conference of the International Group for Lean Construction Contracts and Cost Management	1	
Journal of International Business Research	1	
International Journal of Humanities and Social Science	1	
Journal of Management Accounting Research	1	
Industrial management & Data systems	1	
The Journal of Supply Chain Management: A Global Review of Purchasing and Supply	1	
International Journal of Production Research	1	
Canadian Journal of Administrative Sciences		
Architectural Engineering & Design Management	1	
Journal of Managerial Issues	1	
Product development and design management	1	
Elsevier- Int. J. Production Economics	2	
Proceedings of the 14th annual conference of the International Group for Lean Construction, Santiago, Chile	1	
International Journal of Mechanical and Industrial Engineering	1	
International Journal of Production Economics	1	
Pacific Accounting Review	1	

3. FINDINGS

3.1. Competitive Environment

The U.S and German-based companies who applied target costing in their cost management system were interviewed in the article of Hibbets et al. (2003). They discovered that the firms, who takes the lead in market as product differentiators, adapt this costing more than the firms who practice other competitive schemes like cost leadership. The competitive forces are a strong motivator for implementing it. The findings from these types of literatures can assist the managers to examine the company profile, the level of competitors available in their market, the strategies chosen and how it can be adequately used.

3.2. Construction Business

Jacomit and Granja (2011) applied the target costing concept in the construction business more particularly in the social housing project which took plac ein Brazil. In this industry, the level of competition is really high which helps to maintain a good quality value to their clients. The results showed that the target costing can be very useful in developing their products in a more efficient manner.

Ballard (2006) claimed that applying target costing in the construction projects is a very challenging and complex procedure which proved to be a less difficult in the manufacturing firms. In their case studies, the outcome of one project showed that the costs were not reduced after implementing target costing. Furthermore, it said that the project definition might have to be modified for its successful result. The case results urged to change the mindset of managers from prices to costs which includes the usage of specialty contractors and suppliers in their project definition and design. Kaizen costing could also be applied along with target costing which was validated by Robert and Granja (2006) after they gained a favorable result in civil construction projects particularly in Brand Retail Units.

3.3. Automotive Company

The automobile companies of Japan have to face various severe environmental changes. Their currency yen might experience an appreciation. Their product life cycle might get shortened. The demand structure might get diversified. The competition level might be high. As a result, these companies particular need cost management methods that may prove to be useful for producing and introducing a new product. They have to concentrate on meeting the product demand level at the lowest possible cost and also think about reducing the existing product's cost through elimination of wastes (Monden & Hamada, 1991).

Ibusuki and Kaminski (2007) has conducted a case study on the automotive company for understanding the implementation of target costing and if more specifically said then to examine the opportunity for reducing the real cost. The case study revealed that they were able to reduce the cost and also enhance the product's main function which was its start engine. The company was able to benefit the customers with its products and has made the multifunctional teams and suppliers to work together. This helped them trade off new innovative ideas and overcome the market obstacles. Their research presented a methodology which may be applied to this type of companies with the mixture of target costing and value engineering. The model suggests to enforce the strategies in three stages which are concept, project and validation which contributed in the process of cost reduction as well as ensure a path to achieve the long-term profitability plan. The suggested model was applied in their case study and provided a positive result and the company was able to meet both the customer needs and company's strategies by improving the quality and functionality and lower the cost of the product.

3.4. Supply Chain

Target costing can be also utilized to improve supply chain management of a firm. Instead of using the cost management approaches such as traditional cost system and activity-based cost system for supply chain management, target costing gives a different dimension to it. For the purpose of selecting a suitable method of target costing in this field, customer requirements and supply chain relationship are two factors that need to be considered the most (Lockamy & Smith, 2000).

A firm can be greatly involved with its supply chain and the internal members of value chain such as purchasing and supply management and engineering if they can have supplier development. If the firm try to make changes in the materials, they need to involve more tiers of supply chain. As a result, the current and potential value chain of a firm has influence and also has been influenced by the target costing procedure. The purchasing and supply management team of a firm interacts differently in different firms. Since, the target costing requires crossfunctional team efforts in an organization, purchasing and supply management plays a vital role in the process. Its importance becomes more crucial in cases when the product is new and unique or the time period for its launch is too short or the product requires time to test its feasibility or the product is based on new technology and features. The purchasing and supply management must possess high expertise on the product materials to have better results from target costing application. This team can work more effectively if target costing is applied at early conception stages when they try to identify the best quality suppliers. It requires a supply chainwide effort for target costing including value analysis, value engineering and early supplier involvement (Ellram, 2000).

3.5. Traditional vs Target Costing

Lockamy and Smith (2000) has distinguished between the traditional cost management system and target costing system. The traditional costing was applied by the managers for their planning and control descions who used misleading information of cost. For its implementation, firstly, the managers allocates the total incurred cost into factory costs and operating expenses and secondly, the factory costs are assigned to product units. Hence, it may not be adequate for the management of supply chain. On the other hand, target costing thoroughly examines the life cycle cost of a product to determine selling price, its quality and its functionality before its launched in the market. Since, it is ensured in its development stage, it considers vital issues such as the firm's product, competitive and supply chain strategies beforehand. With the strategies laid down, the target costing performs its activities from its concept building to design and from manufacturing to its logistics.

3.6. Success Factors of Target Costing

In the earlier development and design stages, target costing is particularly applied in the cost management process. It differs from the standard cost control system that is incorporated in the production stage. Hence, it looks for reducing the costs rather than the conventional approach of controlling it. Target costing process included various management science techniques that can help make a difference in the earlier stages. Another important factor for its success is identified to be a good rapport and coordination among various departments in a firm. The multiproduct small production run firms experience more benefits from target costing than the few product large production run firm (Jayeola & Onou, 2014).

The better coordination among the departments are mentioned in other articles as well. Sani and Allahverdizadeh (2012) enlightened a critical issue with this factor. There could be information gap between the departments. However, if the company can build an environment that supports proactive atmosphere and teambased tasks, it can ensure the information gap to be reduced and the departments would be more responsive.

3.7. Small and Medium Size Enterprises

Jayeola and Onou (2014) attempted to show how the adoption of target costing techniques in the small and medium enterprises has influenced their profitability and turnover level. Their study revealed that the target costing techniques have a statistically significant association with both the turnover and profitability of small and medium enterprises. It states that if the enterprises try to increase the sales amount or reduce cost elements or do

both at the same time, the profit level can be significantly impacted. The enterprises in their sample showed an improvement on the liquidity position and profitabilty level after target costing was implemented.

Zengin and Ada (2009) integrated the application of target costing with the value engineering and quality function deployment analysis in particular with the small manufacturing firms. Since the small and medium enterprises operate in changing market conditions, they need to adapt with those by continuous development of its product and improvement of its manufacturing process. The use of target costing becomes more vital in order to survive in their industry with aggressive rivalry and unpredictable market place. They found that the SMEs can effectively implement quality function deployment and target costing even though it can consume a lot of time and require professional assistance to do so. The paper provided a model of cost management that SMEs might use to reduce cost of production and set an appropriate price level. The quality function deployment and target costing helps to make continuous enhancements in developing products and tries to get a balance the product's cost, quality and functionality. It has a successful results in the small manufacturing companies.

3.8. Firm Performance and Business Model Innovations

Huang et al. (2012) attempted to investigate how the application of target costing can have an influence on its business model innovation and its firm performance. They focused on the electromin and infromation systems manufaturers in China. Their outcomes indicated that the application of target costing had a postive relationship with business innovation that means the firms who implemented target costing were able to generate new and creative ideas for their products and were able to bring adequate innovations to their existing products as well. In addition, the application of target costing had a postive relationship with firms performance that indicated that their performance improved with the utilization of target costing. It helped the firms to achieve a competitive advantage on their products by being able to produce the multifunctional high quality products at a very low cost. Target costing can contribute to building a design for business model innovation with new profit formulas. If they can have a model of business innovation, it will have a favorable impact on the firm's profitability level of manufacturers as well.

3.9. Manufacturing and Service Sectors

Yazdifar and Askarany (2011) found that the rate of adoption for target costing has still been low even though the researches indicate its several benefits. Japanese firms tend to adopt target costing more than the Asian or Western firms which differs usually for factors like cultural differences. There were no significant differences on the target costing adoption among the manufacturing and service firms. In contrast, the way it is implemented in their plannings and procedures has a significant difference. The service firms use target costing typically to identify their target product cost instead of accessing strategies to reduce cost.

Rattray et al. (2007) found by surveying 31 New Zealand manufacturing firms that the manufacturing firms who had less involvement of suppliers achieved highly from applying target costing. There was a significant statistical relationship between the firm's higher achievement of target costing and their performance level. However, they discovered no significant differences between the firm's performance who use or do not use target costing practices.

3.10. Environmental Uncertainty and New Product Development

Target costing is adopted when the product operates in a competitive market, however, when the product faces uncertainties through external influences, the firms tends to adopt it less. Ax et al. (2008) has verified this statement in their paper. They also have found a contradictory view regarding target costing and the development of a new product. For any new product, target costing is usually chosen by the firms where its uncertainty level also tends to be high. Hence, it clashes with their result which says that the adoption of target costing is lower when

perceived environmental uncertainty is present. They gave an explanation for such deviation as well. They stated that if the firms get to collect nencessary information about the customer's preferences and competitor's activities, then they get the confidence to use target costing.

4. CONCLUSION

Target costing is a systematic process used by companies as a cost management system which helps to manage the cost of a product. More particularly when a new product is to be designed, its cost and selling price should be determined at this stage using this costing system. It follows to reduce the costs as much as possible to earn the most profit out of the product. The adoption of this costing has been reviewed in this paper. It has been seen that it is more practiced in the manufacturing firms, construction firms and small & medium enterprises. It provided a positive outcome and improved their firm performance level as well. It is mostly used when the product operates in competitive and uncertain environment. It is highly associated with the purchasing and supply chain management of the firms which uses target costing. There were certain gaps and limitations for this paper. The cost management papers and articles are very hard to find, and it was the case for this paper. If more papers were available, then more conclusive and detailed findings could have been deduced. Further researches can be conducted by taking more available papers and get a broader perspective on its impact on various other industries.

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