

The Relationship between Target Costing Method and Pricing -Development of Products in Industrial Companies

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DOI: <http://dx.doi.org/10.15294/ibarj.v3i2.59>

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Info Articles

History Articles:

Submitted 31 December 2018

Revised 15 January 2019

Accepted 8 May 2019

Keywords:

Target Costing; Development of Products; Pricing of Products

Abstract

This study aimed at identifying the relationship between target costing method in product pricing, as well as identify the relationship of target costing in products development in industrial companies operating at Al-Hassan industrial zone located in Irbid. The population of this study was 51 companies which implement the target costing method. Out of those 51 companies, 35 companies were randomly chosen to participate in this study. The questionnaire has been prepared and distributed to financial managers, production managers, marketing managers, and accountants, where each company got 4 questionnaires. One sample T-test in SPSS was used to examine the hypotheses of this study. The results revealed that the application of target costing method leads to pricing products, as well as that the application of target costing system leads to the development of products in industrial companies operating at Al-Hassan industrial zone.

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p-ISSN 2550-0368

e-ISSN 2549-0303

INTRODUCTION

During the last decade of the 20th century and the beginning of the twenty-first decade, economic organizations witnessed many economic changes due to the tremendous progress in the production and IT systems and the intensity of competition among all organizations as a result of the tendency of many countries towards globalization of their economies by joining World Trade Organization (WTO) (Matarneh & EL-Dalabeeh, 2016).

Cost accounting has developed a set of systems and methods, the most important of which is the target costing method, which has been praised as a result of the advantages and benefits that resulted from the practical application of this method (Bahar, 2012). The implementation of the target costing method which had been emerged in Japan in the 1960s is based on reducing costs while maintaining quality beginning from design, research, development and planning, which plays an important role in the development and improvement of products, determining competitive price and achieving the desired profits (Jrirh, 2011).

In Jordan, the industrial sector is one of the main and important sectors of the national economy. The industrial sector contributes directly to economic growth, supports the balance of payments and increases government revenues from taxes (Matarneh & EL-Dalabeeh, 2016). The industrial sector also mover other sectors and contributes to the rotation of the wheel economic. Jordan has been promoting the role of the industrial sector through the establishment of industrial zones in most areas of the Kingdom under the umbrella of Industrial zones Company (ASE, 2017).

Problem Statement

The industrial companies in different countries of the world face a fierce competition in the global market, technological developments in the industrial environment and a continual change in the desires of the customers (Al-Maryani, 2015). A companies are looking for products with a quality that can compete in the market, while

taking into account the amount of profitability factor.

product pricing is often outside the control of management where requires of companies to adopt a modern method through study the behavior of cost and the degree and nature of competition and the behavior of competitors and improve the quality of the product to reach a competitive price in the market (Jrirh, 2011; Joudeh, Al-Attar & Alsoboa, 2016) this method known as the target costing method, which aims primarily to reduce the cost of production in its early stages and the production of high quality products and sophisticated and low-cost and sell them at affordable prices (Dimi & Simona, 2014; Hamdallah, Osama & Srouji, 2014). So this study aims at identifying the relationship of target cost in pricing of the products and identifying the relationship of the target cost in developing the products. Particularly the case of Jordan which consider not clear yet in these contexts (Jrirh, 2011; Joudeh et al., 2016; Matarneh & EL-Dalabeeh, 2016).

Research Objectives

This research aims at reviewing the relationship between target costing method and pricing, and development of products in the industrial companies operating at Al-Hassan industrial zone. The objectives of the study are as follows:

- 1- To identify the relationship of the target costing method on the pricing of products of industrial companies operating at Al-Hassan industrial zone.
- 2- To identify the relationship of the target costing method on the development of products of industrial companies operating at Al-Hassan industrial zone.

Research Hypotheses

The study seeks to test the following hypotheses:

1st hypothesis: There is no significant relationship between target costing method and pricing products in industrial companies operating at Al-Hassan industrial zone.

2st hypothesis: There is no significant relationship between target costing method and development products in industrial companies operating at Al-Hassan industrial zone.

Significance of the Research

This research will contribute in providing comprehensive information regarding the concept of target costing method and the relationship of using the target costing method and pricing, development of products by the industrial companies operating at Al-Hassan industrial zone. In addition, the importance stems from the importance of the associated sector, any follower at the achievements achieved by the industrial zones company during the past few years will discover the important role played by the industrial zones in building a strong Jordanian economy that meets level of ambition (JIEC, 2018).

LITERATURE REVIEW

The Origin of Target Costing

The beginning of the target costing method dates back to the third decade of the 20th century in the Volkswagen German company which has found an alternative way to achieve the target price by reducing the manufacturing cost that has been applied to the DM990 vehicle (Capusneanu & Briciu, 2013). After the end of World War II and the scarcity of economic resources, General Electric adopted the principle of improving the quality of the product and reducing the cost of production, known as Value Engineering, which is based on the production of the product in the absence of production elements (Naser, 2010). In the 1960s, the Japanese developed the idea of value engineering by Toyota's production manager "shusha" Which is known as the term "genka kikaku" by integration of value engineering with the principle of reduction the cost of production in the early stages of production process beginning from the stage of planning, design, development and ending in the stage of sales to reach the final product at the lowest possible cost and reasonable profit margin (Terdpaopon & Visedsun, 2014).

The Definitions of Target Costing

Many authors identified the target costing concept, but there is no unanimity regarding what it represents yet, where the definitions classifies into three different categories: market oriented, engineering oriented and oriented to product functionality (Seindenschwarz, 1993). AL-Matarneh (2008) refers to Target Costing as a method or system that aims to manage the costs and profits planned by studying the market, determining the price and knowing the customers desires and satisfy it, as well as managing the cost during the planning, design and development stage of the product. The Japanese association of accountants defined it as a process to profit management by determining the levels quality, price as well as its development of product to a level that meets the needs of customers with enable the company to achieve its profit strategy (Yook, Kim & Yoshikawa, 2005). Target costing has been defined as cost management methodology that is commonly used in the development of new products (NPD), in which the cost target of the new product is determined, and the motivation for achieving this goal before product launch (Everaert, Loosveld, Tom & Sarens, 2006).

Objectives of Target Costing

As mentioned earlier, target cost is a cost management system that seeks to reduce cost as a primary objective, but the process of product development has its objectives, such as monitoring low cost, high quality, satisfaction of customer desires and product launch time in the market. Target cost contributes as an organizational tool to monitoring these objectives by finding competent product designers (AL-Matarneh, 2008; Jayeola & Onou, 2014).

The objectives of the target cost are to improved profitability, improved processes, product development, reliable pricing, better production and marketing coordination, and better emphasis on cross-functional jobs (Naser, 2010; Zengin & Ada, 2010).

Based on (Alexandra, 2017; Al-Adwan, AL-Singlawi & Al-Hawatmeh, 2018) the target cost objectives can be summarized as follows:

1. Reducing the cost of the product before it occurs: The target cost method is a means

of cost management from the design stage to increase the possibility of reducing it.

2. Controlling the design specifications and production techniques: The cost approach can be used as a tool to control decisions such as design specifications and production methods. To be successful, it requires the use of cost engineering techniques such as value engineering.
3. Achieve the objectives of management through profits and competition in the long term.
4. Monitor product life cycle from start to sale and after-sales services.
5. Increase and improve the quality of the product: through the submission it on time, and then reduce the target time from the beginning of thinking to provide the product to actually provide the client.

Stages of applying the target costing

The process of implementing the target cost goes through a number of stages, which must begin with the planning and design of the product before the start of the manufacturing process, and then follow the attempts of continuous improvement through the following stages which known as the life cycle of the product, without reducing the characteristics or quality of the product, The steps to apply the target costing can be divided as follows (Sarokolae, Taghizadeh & Ebrati, 2012; Dimi & Simona, 2014; Al-Adwan et al., 2018) :

1. Determine the target price.
2. Determine the target profit.
3. Determine the target cost.
4. Use value engineering to determine ways to reduce product cost.
5. Use continuous cost improvement and operational control.
6. Targeted cost reduction which represented the difference between the initial cost of the product and the target cost which the entity seeks to achieve to enhance its profitability and thus its competitive advantage Provided that this is true where it is intended as a set of events aimed at breaking the standards And challenge them in order to reduce the total cost of the product by all available mean (AL-Dlemi & Momani, 2016).

Target cost as a tool to pricing products

The concept of price occupies a large place in the organizations as it represents the monetary value of the products offered to the customer due to the different nature of the competition and the different conditions and nature of the products (Al-Thahabi & Al-Ghabban, 2007).

The target cost is a good pricing tool, especially in highly competitive markets, which allow for a decisive load of the product's potential success before allocating its production resources (Garrissan & Noreen, 2003). In contrast of cost-based pricing, the organization may discover that the product price is not competitive after it has materials were used in its production. In the traditional approach, the cost was determined and then a margin of profit was added to reach the price. In the target costing context, things are reversed where the price is determined before the cost (Pajrok, 2014). The pricing process based on the target costing method at the following stages (AL-Dlemi & Momani, 2016).

1. Determine the product to be priced.
2. Determine the target price.
3. Determine the target cost by discounting the desired profit margin from the target price.
4. Product design, production and marketing within the target cost.

Target costs as a tool for developing the products

Product development is considered a key factor in competitive advantage side by side with effective cost management in early stage of product development process; which became source attention of managers in several of industries (Filomena, Neto & Duffey, 2009). The current economic environment created by the modern technological has bring reduced in the life cycle. As a result of this fact, organizations should make decisions quickly, launch the new products in the market bearing in mind that in some cases, the product life cycle is limited by enumerate months (Dimi & Simona, 2014). Under these conditions, the organizations passed from cost planning to a conception based on the life cycle of the product (Sarokolae et al., 2012).

The product has to be effective taking into account that the incomes obtained during a life cycle to cover all the costs associated with its designing and production and up to product disposal costs. Due to the globalization of markets and increased competition, the entities saw the need to diversify the offer of products resulting in a decrease in the life cycle of products (Matarneh & EL-Dalabeeh, 2016). The decrease of the life cycle of the products has determined that the conceiving, designing, planning and launching activities are essential for a product's cost management. The life cycle of the product can be looked at from two perspectives (Sarokolaee et al., 2012), as it follows:

1. The commercial perspective: refers to how to market accept of the new product. It can be determined by the four levels: launch, growth, maturity and decline, each one of these have costs and revenues related with the structure.

2. Production perspective: life cycle of production includes the levels follow: conceiving, designing, developing the product, production and logistic. These levels are beginning from planning process of product until it is launched in the market. Where target costing removes processes that do not add value to the product which the following figure illustrated (Ansari & Bell, 1997):

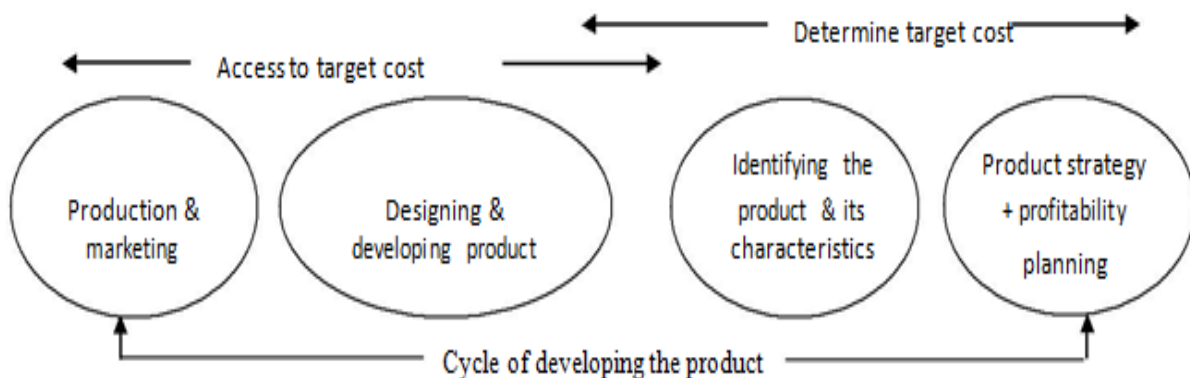


Figure 1. Cycle of Developing the Product Using Target Cost. Source. Ansari & Bell, (1997)

Previous Studies

Study of Matarneh and EL-Dalabeeh (2016) "The Role of Target Costing in Reducing Costs and Developing Products" This study aimed to identify the role of target costing in reduce cost, development of products in Jordanian shareholding industrial companies. The questionnaire has been prepared to and distributed to a sample of (60) Jordanian shareholding industrial companies who responded to this study. The study concluded that the implementation of the target cost system leads to lower costs in the Jordanian industrial companies bearing in mind some factors such as: study the level of technology used in the production process that helps to reduce costs; and study the effective factors on the cost of the product in order to reduce costs to the lowest level while maintaining the quality of products. Also, the study concluded that the implementation of the target cost system

leads to the development of products in the Jordanian industrial companies bearing in mind some factors such as: The Company prepares a set of designs for the same product, where each design has similar characteristics but with different degrees of cost.

AL-Delemi and AL-Momani (2016) conducted a study to identify the effect of the implementation of target cost method in reduce the cost and pricing of products in food companies. To achieve the objectives of the study the researchers designed a questionnaire and distributed to a sample of (25) factory workers in food industry. This study concluded that the development of cost systems is to rationalize the decision-making process when adopting the target costing method to pricing, in light of which it helps companies to survive and achieve the desired volume of sales. Also, the expansion of the food industry by using the standard cost system, and not only the use of

the standards of materials, through the most accurate measure of costs, is reflected in the rationalization of pricing decisions.

Study of Al-Adwan, AL-Singlawi and Al-Hawatmeh (2018) investigated the applicability of target costing methodology (TC) in Jordanian hotels industry. This study was conducted to address examining whether or not such organizations are aware of great benefits of using target costing in setting service market price; further the study investigated whether or not the essential requirements for implementing target costing are available in these hotels. To achieve the study objectives the researcher employed structured questionnaire addressed to (29) Jordanian hotels. The results of the study proved that hotels staff are aware of the great benefits for target costing method if applied; and the results also proved that the essential requirements of target costing are available in hotels and can be employed to apply target costing technique. The findings of the study concluded based on the increase of competition in market between service companies to attract most of customers has promoted companies to review the cost of their services. Traditional methods that are currently applied to set the market price for services became irrelevant to set competitive market prices of services. Therefore, most of manufacturing and service companies started to employ new managerial accounting costing methods to overcome the weakness in pricing methodologies and in allocating the costs for products or services. The newly emerged costing system such as target costing proved their usefulness in determining service cost if applied successfully; this technique succeeded in reducing the cost of service in many worldwide organizations and the same time maintaining the required quality. This method mainly focuses on eliminating the unbeneficial costs that have no value added to products or services.

METHOD

The study follows descriptive analytical method of secondary and primary data based on previous studies and theoretical review. The

descriptive method review and discuss the deferent literature about target costing with reference to journals, reports, textbooks, thesis and any related sources. On the other hand the analytical investigation was based on a structured questionnaire prepared and distributed to a sample of industrial companies operating in the industrial city of Hassan in staff to obtain the necessary information that serve the purpose of the study. The study results was based on statistical analysis as an account of reliability coefficient, (Cronbach's Alpha), which gives the highest stability of analytical instruments. The general results were derived from the descriptive statistics, arithmetic means, and standard deviations for each of the investigated dimensions of target costing. Testing of hypothesis also was also based on the results of one sample T test that conducted by the researcher.

Population and Sample of the study

The study population included the industrial companies operating at Al-Hassan industrial zone in Irbid and applied the target costing method which are (51) company. A random sample of 35 companies was selected and the distribution of the questionnaire was to financial managers, marketing and production managers, and accountants in the industrial companies at Al-Hassan industrial zone by (4) questionnaires for each company. Thus, the study sample consisted of (140) questionnaire, of which 131 were retrieved from the number of questionnaires distributed among the study sample. Excluded (7) questionnaires from it, were not valid for analysis because data fill was not completed. Thus, the number of questionnaires performed on the analysis which achieved the required conditions for answering (124) questionnaires and its response rate (88.6%) of the number of questionnaires distributed to the industrial companies at Al-Hassan industrial zone and applied the target costing method.

Validity and Reliability

To ensure that the phrases contained in the study tool can lead to accurate data collection, the questionnaire was presented to a number of

specialists from the faculty members of a number of Jordanian universities to identify the clarity of the terms used in the study tool, and its compatibility with the objectives of the study, and the researcher was modify the required paragraphs that were difficult to understand.

The reliability of the instrument means having the same results every time by applying the same instrument on the same sample within the same conditions (Sekaran, 2003). Therefore, Cronbach alpha was used to measure the internal consistency of the respondents and their answers. The value, which was (0.7) or higher is considered an acceptable reliability coefficient (Nunnally, 1978) as shown in Table (1).

The data shown in Table (1) show that the values of the internal consistency coefficient for the fields of study were ranged between (0.758 - 0.790). This means that the value of the Cronbach Alpha coefficient for all parts of the questionnaire is greater than (0.70). This indicates that the research tool characterized by internal consistency between its phrases. The value of the coefficient Cronbach Alpha for total phrases questionnaire has

reached (0.769) and this value is acceptable which in turn indicates that the degree of stability is well characterized by the questionnaire which is valid for measuring what it has been prepared for.

Table 1. Cronbach Alpha Test

Part of the questionnaire	The Cronbach Alpha value	Reliability evaluation	Ranking
Pricing of products	0.758	Acceptable	2
Development of products	0.790	Acceptable	1
All parts	0.769	Acceptable	

Analyzing the demographic variables of the study's sample

Frequencies and proportions were used to describe the respondents' answers in terms of their demographic characteristics which shown in Table (2):

Table 2. Demographic characteristics of the sample of the study

Variable	Category	Frequency	Proportion
Education Degree	Diploma	6	4.8%
	Bachelor	82	66.1%
	Master	31	25.0%
	PHD	5	4.0%
Scientific Specialization	Accounting	47	37.9%
	Business administration	23	18.5%
	Finance & Banking	25	20.2%
	Marketing	19	15.3%
	Engineering	10	8.1%
Years of experience	Less than 5 years	23	18.5%
	5-less than 10	60	48.4%
	10-less than 15	21	16.9%
	More than 15	20	16.1%
Job title	Accountant	49	39.5%
	Financial Manager	31	25.0%

Production Manager	25	20.2%
Marketing Manager	19	15.3%
N=124		

The results indicated that the (66.1%) of the study sample were holders of the bachelor's degree. The percentage of holders of the master's degree was (25%) of the study sample, and the percentage of diploma holders reached (4.8%), and the lowest category (4%) was the holder of a doctorate degree.

Table (2) shows that (37.9%) of the sample of the study were academic specialization is accounting, and that the proportion of those who hold the specialization of financial and banking sciences amounted to (20.2%) of the sample, the percentage of study sample who hold the specialization of business administration reached (18.5%), (15.3%) of the study sample have specialization of marketing and the remaining category was (8.1%) of the sample who hold the engineering specialization.

As well as the distribution of members of the sample according to the number of years of practical experience, where it shows that those with less experience (5) years were (29.8%), and that (48.4%) of the sample have of experience (5 years to 10 years). While the proportion of the study sample whose experience ranged from (10 - 15) years was (16.9%). And that the members of the sample whose experience was equal (15 years or more) was their percentage (16.1%).

As for the job title variable, the results indicated that the sample of the study was distributed on the level of job titles in the study, where it was found that the (39.5%) of the study

sample occupy a functionally named "Accountant"; The second rank came from those who occupy a functionally named "financial manager" by (25.0%); (20.2%) of the study sample occupy a job title as "production manager" and the remaining category (15.3%) of the study sample are employed as a marketing manager.

The table shows that (5.6%) of the employees in the industrial companies in the industrial city of Al-Hassan sample of the study obtained a Jordanian Certificate Public Accountant (JCPA), while the holders of the Certificate of Management Accounting (CMA) reached 14.5% Of the sample of the study, the researcher was observed that the lack of interest of the departments of industrial companies operating at industrial AL-Hassan zone or encourage employees to obtain professional certificates or as a condition for appointment or to the promotion where the results indicated (79.8%) did not hold any professional certificates.

RESULT AND DISCUSSION

First Hypothesis

There is no significant relationship between target costing method and pricing products in industrial companies operating at Al-Hassan industrial zone.

The following table shows the mean of the respondents' answers of the relationship between target costing method in pricing products.

Table 3. The arithmetic means and standard deviation between target costing and pricing of products

No	Item	Mean	Standard Deviation	Rank
1	The use of the target costing method contributes to the identification of products that the consumer desires and in which the planned price is paid.	4.17	0.49	1
2	Pricing of products by using target costing method do attract new customers and retain current customers.	4.04	0.62	4
3	Pricing of products according the target costing method contributes	4.00	.0.69	

	to improving competitiveness			9
4	Pricing of products based on target costing method contribute to get reliability of customers.	3.97	0.64	5
5	The use of the target costing method in product pricing contributes to the planning of profitability and cost management.	3.93	0.65	10
6	Pricing of products according of target costing increases sales turnover and then increases profits.	3.89	0.75	6
7	Pricing of products according of target costing doing to increasing sales volume.	3.85	0.78	3
8	The use of the target costing method provides more flexibility in applying the pricing policy of the company's products.	3.76	0.84	7
9	The use of the target costing method doing to exclude cost elements that do not provide the customer with a benefit or advantage which improves the prices of the products.	3.72	0.72	8
10	The target costing method is more equitable in pricing of products compared to other cost methods.	3.69	0.67	2
	Average arithmetic mean for all paragraphs	3.90		

Table 3 shows that the trends of the sample of the study are positive in all items about the relation between target costing and pricing of products in industrial companies operating at Al-Hassan industrial zone, where the general average (3.90) is greater than the mean of the study tool (3), which the arithmetic mean ranged between (3.69 - 4.17) among paragraphs. By reviewing the order of the paragraphs, show that paragraph (1), which states that "The use of the target costing method contributes to the identification of products that the consumer desires and in which the planned price is paid" is of high importance and has the greatest importance in the relationship between target costing method and pricing products with an arithmetic mean (4.17). While the paragraph was the less important the paragraph from the point of view of the employees in the industrial companies operating at Al-Hassan industrial zone on the relationship of the target costing in the pricing of products was paragraph (2), which states that "The target costing method is more equitable in pricing of products compared to

other cost methods", With an average of (3.69). This indicates that the industrial companies operating at Al-Hassan industrial zone are aware of the importance of the target costing method to product pricing. The approach contributes to increasing customer satisfaction with the company's performance and the high level of trust in its products by giving customers the ability to pay the price set by the company with considerations of the balance between the company's desires to profit and reach the products at the lowest price for customers.

To test the first hypothesis, which states that " There is no relationship between target costing method and pricing of products in industrial companies operating at Al-Hassan industrial zone " the T-test was performed at a level of (0.05) according to the rule of decision: the null hypothesis accepted if the calculated (T) is less than (T) value and SiG value is greater than (0.05).The null hypothesis is rejected if the calculated (T) value is greater than the (T) value and the significant value equal or less than (0.05).

Table 4. Results of T. test (first hypothesis)

Sig	Calculated(T) Value	Tabulated (T)Value	Mean	Standard Deviation	Results
0.000	27.231	1.984	3.90	0.37	Reject

Second Hypothesis

There is no significant relationship between target costing method and development of products in industrial companies operating at Al-Hassan industrial zone.

The following table shows the mean of the respondents' answers of the relationship between the target costing method in development of products.

Table 5. The arithmetic means and standard deviation between target costing and pricing of products

No	Item	Mean	Standard Deviation	Rank
1	The target costing method motivates teams to creative and innovate.	3.97	0.73	2
2	The target costing method contributes to product development by choosing the most appropriate design during the design phase.	3.74	0.60	7
3	The target costing method contributes to keeping pace with the recent developments in product design.	3.81	0.67	5
4	The target costing method contribute to design new products in the shortest time possible	3.71	0.65	8
5	The target costing method contributes to the development of the quality scale of the products according to appropriate standards.	3.97	0.66	3
6	The target costing method aims to create a strong incentive for research and development (R & D).	3.69	0.75	9
7	The target costing method helps to create an integrated team that contributes to product development in the company.	3.85	0.71	4
8	The target costing method contributes to the market survey to help the company collect the information necessary to develop the product.	4.02	0.65	1
9	The target costing method doing to develop successful products by balancing the company's ability and customer needs	3.78	0.71	6
Average arithmetic mean for all paragraphs		3.82		

Table 5 shows that the trends of the sample of the study are positive in all items about the relation between target costing and develop products in industrial companies operating at AL-Hassan zone , where the general average (3.82) is greater than the mean of the study tool (3), which the arithmetic mean ranged between (3.69 - 4.02) among paragraphs. By reviewing the order of the

paragraphs, show that paragraph (8), which states that "The target costing method contributes to the market survey to help the company collect the information necessary to develop the product" is of high importance in the relationship between target costing method and develop products with an arithmetic mean (4.02). While the paragraph was the less important the paragraph from the point of

view of the employees in the industrial companies operating in the city of Hassan Industrial on the relationship of the target costing method in the develop of products was paragraph (6), which states that "The target costing method aims to create a strong incentive for research and development (R & D).", With an average of (3.69).This indicates that the industrial companies operating at Al-Hassan industrial zone are aware of the importance of the target costing method to develop products. This method plays a vital role in the market survey to identify the needs and desires of the customers and to meet those needs in the product from the beginning of the value chain (planning and design), as well as the target costing method play important role of finding an integrated team throughout the product life cycle, make modern design of the product.

To test the second hypothesis, which states that " There is no relationship between target costing method and development of products in industrial companies operating at Al-Hassan industrial zone " the T-test was performed at a level of (0.05) according to the rule of decision: the null hypothesis accepted if the calculated (T) is less than (T) value and SiG value is greater than (0.05).The null hypothesis is rejected if the calculated (T) value is greater than the (T) value and the significant value equal or less than (0.05).

Table 6. Results of T. test (second hypothesis)

Sig	Calculate d(T) Value	Tabula ted (T)Val ue	Me an	Standa rd Deviati on	Resu lts
0.000	23.152	1.984	3.82	0.40	Rejec t

CONCLUSION

This study has demonstrated the particular importance attached to the problem of pricing and develop of products in industrial companies operating at Al-Hassan industrial zone located in Irbid. In this context, it has been proposed that the implementation of the target costing as an innovative and result oriented technique which has recently provided beneficial and significant results

in many companies throughout the world, where can pave the way for the pricing and develop of products. Investment for implementation of the target costing method in industrial companies operating at Al-Hassan industrial zone expected to facilitate and promote a rapid movement towards the provision of the relatively stable and real benefits and hence production of more competitive products.

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