


**THE IMPACT OF APPLYING THE TARGET COST APPROACH ON PRODUCTS' STRUCTURE (PRODUCTS PRICING, DEVELOPMENT AND QUALITY)**

Ali Masadeh<sup>A</sup>, Talal Jrairah<sup>B</sup>, Nashat Ali Almasria<sup>C</sup>



ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p><b>Received</b> 17 March 2023</p> <p><b>Accepted</b> 13 June 2023</p>	<p><b>Purpose:</b> This study aimed to examine the effect of applying the target cost approach on product structure in industrial public shareholding companies in Jordan.</p>
<p><b>Keywords:</b></p> <p>Target Cost; Products Structure; Industrial Public Shareholding; Companies in Jordan.</p>	<p><b>Theoretical framework:</b> The purpose of applying target cost approach on products' structure (products pricing, development and quality) and its ability to reduce costs and improvements that can be obtained in the process of applying target cost approach. Numerous research related to applying target cost approach have been conducted, with the majority focusing on large companies. However, Jordanian industrial companies have limitations compared to large companies. Repairability is considered for cost optimization.</p>
	<p><b>Design/methodology/approach:</b> The study uses the analytical approach through the study tool (Questionnaire). The study population consisted of Jordanian industrial companies, which reached (56) companies in 2022, according to the monthly statistical periodical of the Amman Stock Exchange (ASE). A sample of (42) companies was selected, and the questionnaire was distributed to (The Financial Manager, Production Manager, Sales Manager, and Accountant) for each company. The number of questionnaires approved for statistical analysis was (130), representing (77%) of the distributed questionnaires. This study uses different tests to analyze the data and extract results related to the statistical methods, i.e., the descriptive statistic, Cronbach's Alpha Equation, Pearson's Correlation Coefficient, and Simple Linear Regression Analysis.</p> <p><b>Findings:</b> The study found that there is a strong relationship between the target cost approach and the product structure, with the existence of a statistically-significant effect, whereas the correlation coefficient value reached (0.808); thus, the target cost approach contributes to developing products and improving profitability through focusing on the analysis process of the possibilities of product success, before allocating the productive resources thereof. It has also contributed to reducing the cost during the production stages from its beginning while maintaining the products' quality, and it also leads to increasing sales volume through the pricing mechanism based on the target cost. Through the answers of the study sample individuals, it is pointed out that the arithmetic mean of the target cost approach is high, as it reached (3.77) and the standard deviation is (0.57), as well as the arithmetic means of the products' structure is high, as the pricing element came in the first class, with arithmetic means of (3.86) and standard deviation of (0.51), then the development element came in the second class, with arithmetic means of (3.78) and standard deviation of (0.58), whereas the quality element came in the third-class, with arithmetic means of (3.75) and standard deviation of (0.53). The results of the regression analysis also indicate that there is a statistically significant effect of the target cost approach on the quality of products, with (R<sup>2</sup>) (46.3%) which represents the proportion of explanation in the variance of the dependent variable. The findings</p>

<sup>A</sup> Assistant Professor. Faculty of Business Professor, Philadelphia University. Jordan.  
E-mail: [amasadeh@philadelphia.edu.jo](mailto:amasadeh@philadelphia.edu.jo) Orcid: <https://orcid.org/0009-0004-2594-3010>

<sup>B</sup> Professor. Faculty of Business, Philadelphia University. Jordan.  
E-mail: [tjrairah@philadelphia.edu.jo](mailto:tjrairah@philadelphia.edu.jo) Orcid: <https://orcid.org/0009-0006-25943248-5374>

<sup>C</sup> Assistant Professor. Faculty of Business, Philadelphia University. Jordan.  
E-mail: [nalmasria@philadelphia.edu.jo](mailto:nalmasria@philadelphia.edu.jo) Orcid: <https://orcid.org/0000-0003-2439-4115>

of the study highlighted that there is a statistically-significant effect of the target cost approach in product development with ( $R^2$ ) with (37.5%) which indicates that the target cost explains (37.5%) of the difference in the product development. The results also indicate that there is a statistically significant effect of the target cost approach in product pricing with  $R$  value indicating a high-strength correlation between the target cost approach and product pricing, which is (0.812).

**Research Practical implications:** It is necessary to pay attention to qualifying workers by developing programs that deal profoundly with the approaches and modern systems of costs, such as the target cost system and the value chain as these approaches and accounting systems will be intensively adopted in the future for their outstanding role in developing product performance, Pricing and improving its quality.

**Originality/value:** The study recommended that it is necessary to develop successful products and price them based on the target cost by balancing the company's ability and customers' needs, as well as using methods that lead to consistency and harmony between products' quality and customers' expectations. The study also recommended focusing on qualifying workers by developing programs that profoundly tackle the approaches and modern systems of costs, such as the target costing system

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## O IMPACTO DA APLICAÇÃO DA ABORDAGEM DE CUSTO-ALVO NA ESTRUTURA DOS PRODUTOS (PREÇO, DESENVOLVIMENTO E QUALIDADE DOS PRODUTOS)

### RESUMO

**Objetivo:** Este estudo teve como objetivo examinar o efeito da aplicação da abordagem do custo-alvo sobre a estrutura de produtos em empresas industriais de capital aberto na Jordânia.

**Estrutura teórica:** O objetivo da aplicação da abordagem do custo-alvo na estrutura dos produtos (preço, desenvolvimento e qualidade dos produtos) é a capacidade de reduzir os custos e as melhorias que podem ser obtidas no processo de aplicação da abordagem do custo-alvo. Várias pesquisas relacionadas à aplicação da abordagem do custo-alvo foram realizadas, sendo que a maioria se concentrou em grandes empresas. Entretanto, as empresas industriais jordanianas têm limitações em comparação com as grandes empresas. A reparabilidade é considerada para a otimização de custos.

**Projeto/metodologia/abordagem:** O estudo usa a abordagem analítica por meio da ferramenta de estudo (questionário). A população do estudo consistiu em empresas industriais jordanianas, que chegaram a 56 empresas em 2022, de acordo com o periódico estatístico mensal da Bolsa de Valores de Amã (ASE). Foi selecionada uma amostra de (42) empresas, e o questionário foi distribuído para (o gerente financeiro, o gerente de produção, o gerente de vendas e o contador) de cada empresa. O número de questionários aprovados para análise estatística foi de (130), representando (77%) dos questionários distribuídos. Este estudo usa diferentes testes para analisar os dados e extrair resultados relacionados aos métodos estatísticos, ou seja, a estatística descritiva, a Equação Alfa de Cronbach, o Coeficiente de Correlação de Pearson e a Análise de Regressão Linear Simples.

**Conclusões:** O estudo constatou que há uma forte relação entre a abordagem do custo-alvo e a estrutura do produto, com a existência de um efeito estatisticamente significativo, sendo que o valor do coeficiente de correlação atingiu (0,808); assim, a abordagem do custo-alvo contribui para o desenvolvimento de produtos e para a melhoria da lucratividade por meio do foco no processo de análise das possibilidades de sucesso do produto, antes de alocar os recursos produtivos. Ela também contribuiu para reduzir o custo durante os estágios de produção desde o início, mantendo a qualidade dos produtos, e também levou ao aumento do volume de vendas por meio do mecanismo de precificação baseado no custo-alvo. Por meio das respostas dos indivíduos da amostra do estudo, destaca-se que a média aritmética da abordagem do custo-alvo é alta, pois atingiu (3,77) e o desvio padrão é (0,57), assim como a média aritmética da estrutura dos produtos é alta, pois o elemento de precificação ficou em primeiro lugar, com média aritmética de (3,86) e desvio padrão de (0,51), depois o elemento desenvolvimento ficou na segunda classe, com média aritmética de (3,78) e desvio padrão de (0,58), enquanto o elemento qualidade ficou na terceira classe, com média aritmética de (3,75) e desvio padrão de (0,53). Os resultados da análise de regressão também indicam que há um efeito estatisticamente significativo da abordagem de custo-alvo sobre a qualidade dos produtos, com ( $R^2$ ) (46,3%), que representa a proporção de explicação na variação da variável dependente. Os resultados do estudo destacaram que há um efeito estatisticamente significativo da abordagem do custo-alvo no desenvolvimento de produtos, com ( $R^2$ ) de (37,5%), o que indica que o custo-alvo explica (37,5%) da diferença no desenvolvimento de produtos. Os resultados também indicam que há um efeito estatisticamente significativo

da abordagem do custo-alvo no preço do produto com o valor R) indicando uma correlação de alta intensidade entre a abordagem do custo-alvo e o preço do produto, que é de (0,812).

**Implicações práticas da pesquisa:** É necessário dar atenção à qualificação dos trabalhadores por meio do desenvolvimento de programas que lidem profundamente com as abordagens e os sistemas modernos de custos, como o sistema de custo-alvo e a cadeia de valor, já que essas abordagens e sistemas contábeis serão intensamente adotados no futuro por seu papel de destaque no desenvolvimento do desempenho do produto, na precificação e na melhoria de sua qualidade.

**Originalidade/valor:** O estudo recomendou que é necessário desenvolver produtos bem-sucedidos e precificá-los com base no custo-alvo, equilibrando a capacidade da empresa e as necessidades dos clientes, além de usar métodos que levem à consistência e à harmonia entre a qualidade dos produtos e as expectativas dos clientes. O estudo também recomendou o foco na qualificação dos funcionários por meio do desenvolvimento de programas que abordem profundamente as abordagens e os sistemas modernos de custos, como o sistema de custeio alvo

**Palavras-chave:** Custo-Alvo, Estrutura de Produtos, Participação Acionária Pública Industrial, Empresas na Jordânia.

## IMPACTO DE LA APLICACIÓN DEL ENFOQUE COSTE-OBJETIVO EN LA ESTRUCTURA DEL PRODUCTO (PRECIO, DESARROLLO DEL PRODUCTO Y CALIDAD)

### RESUMEN

**Objetivo:** Este estudio pretende examinar el efecto de la aplicación del enfoque de costes objetivo sobre la estructura de producto en empresas industriales jordanas que cotizan en bolsa.

**Marco teórico:** El objetivo de aplicar el enfoque de costes objetivo a la estructura de productos (precio, desarrollo de productos y calidad) es la capacidad de reducir costes y las mejoras que pueden obtenerse en el proceso de aplicación del enfoque de costes objetivo. Se han realizado varias investigaciones relacionadas con la aplicación del enfoque de costes objetivo, y la mayoría de ellas se centran en grandes empresas. Sin embargo, las empresas industriales jordanas tienen limitaciones en comparación con las grandes empresas. La reparabilidad se tiene en cuenta para la optimización de costes.

**Diseño/metodología/enfoque:** El estudio utiliza el enfoque analítico a través de la herramienta de estudio (cuestionario). La población del estudio estaba formada por las empresas industriales jordanas, que alcanzaron las 56 empresas en 2022, según el boletín estadístico mensual de la Bolsa de Ammán (ASE). Se seleccionó una muestra de (42) empresas, y el cuestionario se distribuyó a (el director financiero, el director de producción, el director de ventas y el contable) de cada empresa. El número de cuestionarios aprobados para el análisis estadístico fue de (130), lo que representa el (77%) de los cuestionarios distribuidos. Este estudio utiliza diferentes pruebas para analizar los datos y extraer resultados relacionados con los métodos estadísticos, es decir, estadística descriptiva, Ecuación Alfa de Cronbach, Coeficiente de Correlación de Pearson y Análisis de Regresión Lineal Simple.

**Conclusiones:** El estudio constató que existe una fuerte relación entre el enfoque del coste objetivo y la estructura del producto, con la existencia de un efecto estadísticamente significativo, y el valor del coeficiente de correlación alcanzó (0,808); así, el enfoque del coste objetivo contribuye al desarrollo del producto y a la mejora de la rentabilidad al centrarse en el proceso de análisis de las posibilidades de éxito del producto antes de asignar los recursos de producción. También contribuyó a reducir el coste durante las fases de producción desde el principio, manteniendo al mismo tiempo la calidad de los productos, y también permitió aumentar el volumen de ventas gracias al mecanismo de fijación de precios basado en el coste objetivo. A través de las respuestas de los individuos de la muestra de estudio, se destaca que la media aritmética del enfoque del coste objetivo es alta ya que alcanzó (3,77) y la desviación estándar es (0,57), así como la media aritmética de la estructura del producto es alta ya que el elemento de fijación de precios ocupó el primer lugar con una media aritmética de (3,86) y una desviación típica de (0,51), el elemento de desarrollo ocupa el segundo lugar, con una media aritmética de (3,78) y una desviación típica de (0,58), mientras que el elemento de calidad ocupa el tercer lugar, con una media aritmética de (3,75) y una desviación típica de (0,53). Los resultados del análisis de regresión también indicaron que existe un efecto estadísticamente significativo del enfoque de costes objetivo sobre la calidad del producto, con ( $R^2$ ) (46,3%), que representa la proporción de explicación en la variación de la variable dependiente. Los resultados del estudio pusieron de relieve que existe un efecto estadísticamente significativo del enfoque del coste objetivo sobre el desarrollo del producto, con ( $R^2$ ) de (37,5%), lo que indica que el coste objetivo explica el (37,5%) de la diferencia en el desarrollo del producto. Los resultados también indican que existe un efecto estadísticamente significativo del enfoque del coste objetivo sobre el precio del producto, con un valor R) que indica una correlación de alta intensidad entre el enfoque del coste objetivo y el precio del producto, que es de (0,812).

**Implicaciones prácticas de la investigación:** Es necesario prestar atención a la cualificación de los trabajadores desarrollando programas que traten en profundidad los enfoques y sistemas modernos de cálculo de costes, como

el cálculo de costes por objetivos y la cadena de valor, ya que estos enfoques y sistemas contables se adoptarán intensivamente en el futuro por su destacado papel en el desarrollo del rendimiento de los productos, la fijación de precios y la mejora de la calidad de los productos.

**Originalidad/valor:** El estudio recomendó que es necesario desarrollar productos de éxito y ponerles precio basándose en el cálculo de costes por objetivos, equilibrando la capacidad de la empresa y las necesidades del cliente, y utilizando métodos que conduzcan a la coherencia y la armonía entre la calidad del producto y las expectativas del cliente. El estudio también recomienda centrarse en la cualificación de los empleados mediante el desarrollo de programas que aborden en profundidad los enfoques y sistemas de costes modernos, como el sistema de costes objetivo.

**Palabras clave:** Target Costing, Estructura del Producto, Accionariado Público Industrial, Empresas en Jordania.

## INTRODUCTION

The global competition in the present age obliged industrial companies to turn to modern management accounting approaches for a distinguished competitive position enabling these companies to gain markets and achieve customer satisfaction. This requires minimizing costs so that these products can compete in terms of product structure (Quality - development - pricing) in local and global markets; therefore, the development of cost systems has become necessary and should be objectively and scientifically approached to reach rational pricing decisions (Hattami et al., 2020; Alam et al., 2020).

Target costing is an applicable idea that is in keeping with rising competition and the fact that when supply considerably outweighs demand, market forces have a stronger impact on price levels (Lockamy, 2000; Hamood et al., 2011; Al-HAshimi, 2020). Accordingly, target costing is required to accomplish the company's goals in the context of cost reduction, which will have an effect on the competitiveness of pricing levels (Zengin and Ada 2010; Gonçalves et al., 2018). Objective costing, which takes into account the whole cost of the product in the product life cycle and tries to lower the total cost of a product, enables businesses to provide products or services that may both satisfy consumer needs and the desired profit target. In order to maximize earnings or profits, a target costing strategy that seeks to cut production costs is required (Ansari et al., 2006). In order to increase production cost efficiency and, therefore, earnings, one must be set to employ the target costing approach (Ellram, 2000; Zengin and Ada 2010; Teng tarto et al., 2023). Companies are required to modify their attitudes about managing and operating a business in order to thrive and be able to compete in the business sector (Helms et al., 2005). Businesses that wish to grow or survive must be able to generate a high volume of high-quality products (Ax et al., 2008; Woods et al., 2012; Bock and Pütz, 2017; Potkány et al., 2021; Samogorodskaya et al., 2020).

Despite the fact that the manufacturing process operates smoothly, the expenses incurred by the firm must be carefully controlled. If efforts are not made to keep production costs to a minimum, production costs will increase. Therefore, target costing, a technique for estimating market pricing and then costs, must be used to conduct total cost control in order to assist businesses accomplish their objectives of attaining optimal profits. Target costing is a critical force for cost reduction (Juwita & Satria, 2017). Malue (2013) claims that target costing is the process of estimating a product's expected cost based on a competitive pricing in order for the product to make the anticipated profit (Ax et al., 2008; Sharaf-Addin et al., 2018). Target costing takes into account a product or service's total cost across its entire life cycle and works to lower that cost. Companies can calculate product costs using target costing based on what customers can spend (Bock and Pütz, 2017; Gu, 2019).

By accurately estimating a product's cost as well as its design and development (Cooper, 2017), Target Costing (TC) aims to achieve the required financial and non-financial objectives while also maintaining the product's competitiveness. TC may be seen of as a management philosophy that combines value engineering, cost control, profit management, and value analysis (Muhsin, and Jasim, 2023). In comparison to other management accounting methods, the adoption of TC in a highly complicated supply chain market necessitates a more coordinated effort. All supply chain participants must look for methods to save costs in the creation, production, and distribution of components (Ellram, 2000; Aladwan et al., 2018; Al-HAshimi, 2020; Almasria, 2022).

Target costing is a significant factor of cost management since it allows for cost reduction and product improvement without sacrificing product quality. Additionally, it results in customer happiness, allowing businesses to maximize earnings and sales. Studying the market and the dynamics of its forces resulted in the establishment of this system (Almasria, 2018; Wakefield, 2019; Hattami et al., 2020;).

Two significant truths concerning expenses and marketing have been discovered as a result of target costing (Al-hosban et al., 2021). The first is that most companies are aware of the limited influence they have on prices. The second is that a substantial portion of a product's cost is incurred during the product's design phase. It refers to characterizing a product as a whole using target costing in target costing practice (Celayir, 2020; Alduais et al., 2022).

This study is conducted to demonstrate the effect of applying the target cost approach on the products' structure in the industrial public shareholding companies in Jordan, based on

its importance in the process of economic growth, particularly under the conditions of the modern industrial environment (Pavlatos, 2022).

The problem of the study is focused on the necessity of searching for new cost systems that help the management reduce production costs, as well as raise its quality, particularly in light of the complexities of production processes as a result of changes in the business environment. Thus, one of the priorities of industrial companies is finding the product which guarantees the company competitiveness in the sector, considering profits simultaneously. Finding a competitive price, i.e., companies are seeking to create a high-quality product at a lower cost and a competitive price for the market, maintaining profits. Accordingly, the study problem can be determined as follows:

What is the effect of applying the target cost approach on product structure in Jordan's industrial public shareholding companies sector?

This study aims at investigating the target cost approach, its mechanisms, and requirements, as well as its impact on products' structure, for indicating the following:

- *The importance of the target cost approach is one of the strategic cost management methods.*
- *Determining the extent to which the target cost approach contributes and influences products' structure (quality, development, Pricing).*
- *Studying the factors and dimensions of product structuring (quality, development, Pricing) to identify the extent of its impact and how to use the information thereof in the Decision-Making process.*

This study is considered necessary for discovering the importance of using the target cost approach and its impact on products structure; mainly, it is one of the modern approaches which using it by industrial companies that may contribute to increased production efficiency, as well as increasing competitiveness through providing more appropriate cost data for control, planning, and decision-making.

The scientific importance is based on the fact that it combines the two fields of target cost and product structure (quality, development, Pricing); as it affects achieving profits, simultaneously, the company remains and continues in competition in its sector.

As to the practical importance, the importance of the study lies in the fact that it provides information that helps the industrial sector in Jordan to know the effect of applying the target cost approach on the product structure in order to benefit from it in making decisions that

achieve the company financial balance and support its existence among competitors, which increases its ability to encounter present and future challenges.

Regarding the decision makers, the study attempts to assist managers in encountering pricing challenges and the extent of its impact on products' structure, maintaining the percentage of profits, and this price can be achieved or reached by the most significant percentage of consumers.

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPEMNTS**

The technological developments and the numerous and continuous changes that occurred in the business environment, as well as the appearance of giant companies as a result of large mergers that can survive in local and global markets, led to increasing the severity of competition faced by industrial establishments and almost reducing its ability to affect the price, whereas the continuity of these establishments became depended on its ability to provide products with competitive prices and high quality. In addition, the continuous development of products led to shortening the product life, whereas the opportunities to affect the profit are focused in the design and development phase, where the product cost is determined.

For managing costs during product development, Stadtherr and Wouters (2017) evaluated the literature on the subject of product interdependencies. Their examination of the literature focused on how techniques like component commonality, modular design, and product platforms—which they referred to as "modularity"—can be utilized to control costs when there are numerous interdependencies between product development projects. Stadtherr and Wouters (2017) took into account the situation of businesses that must effectively control their expenses in order to provide their clients with a wide range of end products.

Target costing achieves its goals by shifting the firm's competitive pressures on the product's creators and suppliers (Ellram, 2000). It helps people with a variety of activities to create items with the proper quality, functionality, and price. According to Ahn et al. (2018) target cost decision-making effectiveive strategy for aiding decision-making and influencing decisions,

The target costing method is built on the analysis of all expenses associated with owning the product across all phases of its life cycle. The cost of the product's disposal at the end of its useful life is one of these parts, along with the purchase price, running expenses, operational needs, maintenance and repair costs, and operating costs. The goal of the target costing system is to lower the cost of the product's life cycle (Hattami et al., 2020; Airout et al., 2023).

In the realm of accounting, the contingency theory has arisen in order to oppose the critiques leveled against the conventional methods. The most significant of these complaints was the absence of agreement over the contingency elements that had to be considered when creating management accounting systems, as well as the challenge in figuring out how to relate contingency factors to management accounting systems. It is unclear if environmental and technology elements influence management accounting systems directly or whether they do so indirectly by having an impact on the organizational structure (Okpala, 2016; Almasria et al., 2021).

When implemented correctly within the supply chain, target costing offers a number of benefits, including the ability to select the most suitable product innovation and process technologies, reduce the complexity of product lines, do away with cost overruns, keep design issues to a minimum, and deliver the lowest-priced, highest-value product to the final customer. Along the supply chain, knowledge exchange, value engineering, and part standardization are other developments (Ellram, 2000; (Al-HAshimi, 2020).

The value chain relies on activity analysis and the elimination of operations that do not contribute value, which lowers the cost of the final product while still meeting goal costs. Along with cost-cutting, the two ideas emphasize maintaining product quality. The research discovered few publications describing the complementary relationship between target costing and value chain analysis to gain competitive advantage. Furthermore, there is no study that explains this relationship among Saudi Arabian enterprises. In order to give manufacturing organizations a competitive edge, the current research intends to build a framework of complimentary linkage between value chain analysis and target costing systems.

### **FIRST: THE TARGET COST APPROACH:**

The concept of target cost arose in Japan's sixties in the last century. In contrast, the rarity of resources after the end of World War II led to the appearance of the so-called target cost, i.e., giving utmost importance to the product characteristics at the lowest possible cost, either a financial cost or raw materials' cost, besides it was found that this method supports the company competitive position (Hamood et al., 2011; Abdul Wahed, 2020).

The target cost approach is based on determining the Maximum Allowable Costs for the new product, and then a concept of how to determine the target cost shall be developed, as the target cost calculation starts with the target selling price, which expresses the estimated price of the product which potential consumers are ready to pay to get the product (Okpala, 2016).



This price is estimated based on studying the extent to which consumers accept the product and the reaction of competitors to the price at which the economic establishment offers its new product (Faraji, 2013; Sevim, 2019). In other meaning, it is possible to determine the range within which the product price should be through market research, then the required profit is deducted from this price, and the product design team is required to ensure that the cost of manufacturing the product is within the target costs (Garrison, 2002). The quantity expected to be sold shall also be determined in light of the planned price (Zengin and Ada 2010). The target cost approach represents an integrated methodology that aims at reducing the cost, starting from the initial phases before designing the product and during the stages of the product life cycle, including planning, developing, and preparing product models, maintaining the quality thereof as a top priority (Kaplan, 2004). It was also defined by (Horngren, 2012) as a modern approach and methodology from the science of management accounting that is used to manage and reduce costs during the design and development phase of the product while maintaining the highest possible quality required by customers. (Fouda, 2021) defined it as a strategic tool that aims at reducing the cost paid in designing and developing the product, considering not reducing its quality, and contributing to achieving the company strategy by reaching a stable competitive position in the market.

It can be argued that the target cost approach is a strategic methodology contributing to reducing the cost during the production stages from its beginning, taking into account achieving the quality required by customers at the lowest possible cost and maintaining the company's profits and competitive position (Narsaiah, 2020; Stadtherr, 2021). Activating this approach in the industrial companies in Jordan helps them to develop future strategies to encounter any challenges related to cost reduction and determine the level of product quality and price (Briciu, 2013; Sharafoddin, 2016; Thalmeiner, 2021).

Among the most important objectives of the target cost, according to (Imran 2021, and Abdul Wahed 2020), are:

- Determining the price that achieves a market share for the company
- It achieves the company's objective of profitability and a competitive position by determining the profit margin the company is willing to achieve before it offers its products in the market.
- Determining and reducing the necessary costs during the product life cycle, effective from pre-design until after sales.

The target cost approach includes several principles and advantages, the most important of which are:

- **Focusing on the Product Design:** the target cost approach aims at reducing the cost before completing the design process, as it is so difficult or impossible to make any adjustment to the cost after its completion
- **Controlling the target price for sale:** The target cost approach determines the target price for the company before launching the product, considering the reasonable price for customers and consumers, which guarantees a profit for the company.
- **The life cycle of costs in production:** where the target cost approach contributes to managing costs and profit simultaneously in the production process.
- **Value Chain Leadership:** The target cost approach combines cost reduction through value chain activities and supplier activities to achieve the best quality at the lowest cost (Taher et al., 2018).

Upon those above, it can be argued that the target cost approach is concerned with determining the product's total cost from the pre-design stages till making it available for customers, which leads to achieving the company's profit objectives at the lowest possible cost, satisfying customers, as well as achieving a competitive advantage in the market.

## **SECONDLY: PRODUCT STRUCTURE**

In light of the acceleration and changes in customer tastes and the rapid developments in information technology, it has become necessary for companies to search for methods to produce products at low cost and high quality and at the best price for the consumer and at the same time maintaining the company profitability, as the traditional accounting systems are no longer sufficient to reach the abovementioned. Thus, cost management and its impact on product structuring, besides its importance in achieving a competitive advantage, appeared (Afonso et al., 2008).

One of the most critical challenges that companies encounter is achieving customer satisfaction by finding products that accommodate the value that customers demand and that meet their desires, which prompted companies to pay attention to product structure (quality, development, Pricing) as one of the essential strategies that enable companies to overcome these challenges and achieving a competitive advantage (Fouda, 2021).

Whereas these elements play a vital role in the continuation and success of companies, and this is manifested by the existence of the elements of quality and Pricing in the product

survival triangle, which needs continuous development to ensure its survival within the borders of the triangle and thus achieving a competitive advantage for the company (Nicolini et al., 2000; Okpala, 2016).

### **Products Quality:**

Quality occupies an important position in the product structure. The openness of global markets and the diversity of production gave consumers the freedom to choose among products, thus product quality became one of the most important factors governing consumer choice ((Palulun et al., 2021; Pavlatos, 2022). Therefore companies were obliged to search for ways to improve the quality of their products and pay attention to this element, with no effect on the cost, with an acceptable price. Accordingly, quality culture has become one of the most critical elements for achieving competitive advantage (khan and SufyanBeg 2012; Bock and Pütz, 2017).

The concept of quality differs in terms of viewpoints, and all companies seek to achieve it so that the product or service reaches the customer for a price greater than or at least equal to the price paid for getting this product or service (Ratray et al., 2007; Kaur, 2014; Kutayni et al., 2022). Therefore, product quality contains two main aspects mentioned by (Mohammed, 2009) which are:

- *Design Quality is the extent to which the product specifications conform to the required specifications and achieve the required quality. It can be automatically achieved by achieving design quality by providing it with the data to be processed to obtain the required design at a lower cost (Abdullah, 2019).*
- *Conformity Quality is the practical ability to measure changes in the various stages of design to achieve the required specifications and the extent to which the product specifications conform to the planned specifications, regardless of the design quality level (Becker, 2018) .*

Thus, it can be concluded that product quality lies in determining the characteristics that must be available in the product, which represents the expectations of the product after its completion and before it reaches the consumer, as well as seeking to improve and develop it during the stages of its life cycle (Dalahmeh, 2018; Szczerbak, 2022).

## Product Development

The product development strategy is one of the essential components for guaranteeing the order existence, as well as guaranteeing the highest quality of products before offering it in the markets (Ibusuki, 2007; Febriana, 2022). The main objective of this strategy related to developing products is acquiring a competitive advantage and the resulting increase in sales growth, consequently increasing revenues and profits (Abdullah and Senan, 2019; Sharaf-Addin, 2021). Thus, the companies started to realize the desires and needs of its consumers and fulfill the varying requirements of markets through improvement, development and prediction thereof, as adopting a complete strategy for production, manufacturing and marketing. It is a mechanism aiming at increasing the productivity of the product by improving the quality through the disposal of the failure costs and reaching zero defect, as well as measuring the degree of the market acceptance of the product for the product conformity to specifications and standards, thus producing high-quality products (Sobotka et al., 2007; Afonso et al., 2008; Sedevich, 2022).

The process of development was defined as "Making amendments or changes, whether small or big to the production process of the current product, which makes it more effective, diverse, and proper for use. It means developing the product specifications by preparing the plans aiming at making improvements of the product or service (Faraji, 2013; Matarneh et al., 2016; Al-Hattami et al., 2020). Al-Qaruity,(2001) views that products development is considered necessary in the progress of any company and requires large costs, and products development does not mean that it is different in function from the existing duct, but it means that it is an amendment of the existing product (Nicolini et al., 2000; Everaert et al., 2006; Abu-Tapanjeha et al., 2020). Product development is anything that can be changed, added or improved in the product specifications and properties, whether they are tangible or intangible material ones, whereas it leads to fulfilling the needs and desires of the current consumers increasing in the targeted sectors of the market (Gonçalves et al., 2018; Kostrzewa, 2022).

The product is essential in directing the company's activities, as it represents the focal and essential point to meet customers' needs. Indeed, the product does not last long, as it goes through a life cycle that determines the period in which it remains in the market until the appearance of problems that affect its sales, leading to the stage of deterioration. Companies are seeking a product development method as one of the necessary methods to face these problems. Adopting a product development strategy by the company leads to success through its product, service, and production methods, whether with the intent of improving quality or

reducing cost, which in turn leads to an impact on competitiveness, confirming the importance of product development (Lapinskaitė and Kuckailytė, 2014; Almasria, 2018; Masadeh et al., 2021). Upon those above, it can be argued that product development is a methodology that aims at measuring the extent of market acceptance of products to ensure the survival and growth of the company in executing its activities. Product development is considered one of the essential components of any management strategy adopted by the company.

### **Product Pricing**

The pricing decision is deemed one of management's most important and complex decisions. This decision directly affects the possibility of marketing the product and the level of profitability, as well as the ability of the establishment to remain in the market and continue its competitiveness. (Mores et al., 2003; Palulun, 2021; Homburg et al., 2021).

The decision to determine the selling price of the final product is not merely a marketing or financing decision, but it extends to all aspects of the company's activities, i.e., it affects the company as a whole. The selling price is an essential factor in determining the demand for products, and simultaneously it determines the company's revenue inflows (Narsaiah, 2020).

There are major influences on pricing decisions, such as customers, competitors, and costs

From a practical perspective, the cost is the decisive factor in pricing decisions due to the relative availability of such information compared to other factors, in addition to the importance of covering costs in the long term, at least to enable the establishment to continue its activity (Huang et al., 2012; Almasria et al., 2021). Many pricing approaches take cost as a basis for determining the selling price, the most important of which are: the pricing approach based on total cost, the pricing approach based on a variable cost, pricing approach based on the return on investment (Ahn et al., 2018; Darinskaya et al., 2020).

Modern pricing approaches are concerned with cost reduction, mainly regarding the value chain, which is meant as several successive functions in which value is added to products and services from the beginning when they are just ideas, i.e., research and development, to the end when they are consumed by the customer, through design, production, marketing, and distribution. This is accomplished in two directions:

The first direction is towards completing the chain to the downstream end through marketing, distribution, and after-sales functions (Palulun et al., 2021). The other direction is towards the beginning of the upstream series towards research, development, and engineering

design of products. Both directions have direct consequences (Szczerbak, 2022; Mohamed, 2021). Generally, most industrial companies adopted the second direction towards the beginning of the series. This is because the primary cost reasons are in the early stages of product development and design (Al-Hattami et al., 2020). It was exhibited that once production begins, more than 90% of product costs become uncontrollable (fixed), and improvement and development at the beginning of the chain can lead to other opportunities to reduce costs at the end of the chain (Sevim, 2019).

The idea of focusing on the first jobs at the beginning of the value chain to achieve cost reduction is called "Target Costing." Target Costing is an extensive program for cost reduction early starts before any plans for new products appear (Kato, Yutaka, 1993).

The target cost pricing strategy includes five main steps, represented in the following:

Selling price estimation, target profit estimation, target cost determination, value engineering analysis to achieve target cost, (*Kaizen*) Principle Of Continuous Improvement.

The target cost approach for product pricing has many characteristics, the most important of which are:

- *Not introducing the product to the market except after determining the expected price that customers can accept, and thus the company guarantees that the price at which the new product will be introduced to the market will be acceptable in advance.*
- *Determining the target cost for unit production of the new product will serve as a solid incentive to control costs and attempt to reduce them to the lowest possible level before taking any action to produce the product.*
- *The target cost is used in planning and designing the product, not in the production stage. Therefore, the target cost is an Approach point for planning and managing costs in the planning and design stages and controlling costs in the production stage.*
- *The value engineering analysis used to reduce the cost attempts to achieve a tangible reduction in cost by eliminating activities and costs that do not add value, simultaneously maintaining the level of product quality and functional characteristics required by the customer. Thus, a new product is produced with the highest possible quality and the lowest possible cost.*
- *A strong incentive for research and development to achieve technological progress so that new products can be manufactured and introduced to the market at an economical cost (Hussein, 2000).*

Previous studies have tackled aspects related to the subject of the study, such as the study of *Fouda, El-Sayed (2021)*, which aimed at demonstrating the impact of using the strategic cost analysis method in decision-making regarding the Pricing in industrial companies in Egypt. One of the most important findings of the study is that the traditional cost systems are no longer sufficient to keep pace with the changes in the modern industrial market and that the adoption of strategic cost analysis has become necessary for product development, as it contributes effectively to keeping pace with the change in the industrial environment and meets the management need for information that enables it to take decisions, especially Pricing (Alawaqleh et al., 2021). The study also recommended training cost accountants, production engineers, and production managers to apply strategic cost management methods and develop existing cost management methods to ensure the continuity of competition and the company's survival in the market. As for the study of *Abdel Wahed, and Naima (2020)*, target cost was defined as the most critical strategic cost management technique that keeps pace with the requirements of the competitive environment. One of the study's most important findings is that local products become more competitive in the local market when the target cost is applied. A competitive advantage is achieved while reducing costs, increasing the company's profitability and competitiveness in the market. The study also proved that the product quality approach has significantly contributed to reducing costs, achieving a lower cost advantage, and maintaining product quality. (*Al-Shaboul, 2017*) Study focused on the extent of applying target cost and value engineering and its impact on cost reduction in industrial shareholding companies in Jordan in the food industry sector. The study concluded that The target cost approach is an approved and applied approach in the study sample of companies, and the results showed that the target cost approach and value engineering impact reducing costs. One of the most important recommendations of the study is focusing on applying the value engineering approach as a strategic approach for reducing costs, as well as for adding value to its products that make it a strong competitor in the industrial sector. The study (*Al-Khalaf, Nidal Reda, and Anaam Al-Zuwailf, 2007*) aimed to identify the philosophy and mechanism of applying the pricing approach based on the target cost under conditions of intensive competition in the contemporary economy. It dealt with conducting a field study to identify the fact of pricing methods used in the Jordanian veterinary pharmaceutical industry, as well as the assessment thereof for demonstrating whether these methods are appropriate to current developments and the diversity of competition forms (Lueg, 2020; Celayir, 2020).

The study provides many findings, the most important of which are that pricing decisions are affected by many factors such as customers, competitors, and costs and that adopting the traditional approach in pricing in the age of globalization and free trade makes competition unavailable within the limits of the prevailing price in competitive markets, and that the target cost approach represents a method of pricing and a system for planning profitability and cost management in a competitive environment, as well as that the companies in the research sample apply an actual cost system which is based on pricing its products mainly on the total cost (Hammami et al., 2019; Al-HAshimi, 2020; Alawaqleh, and Almasria, 2021; Silva, 2022).

Based on the previous studies, this study was characterized by using the target cost approach so that the product becomes within the consumer's purchasing power, in addition to the extent of its impact on the product structure (development, Pricing, quality) and the contribution to maintaining the company's competitive position and increasing profitability, mainly whereas studies in the industrial field in Jordan, which approached the extent of application of the target cost approach and its impact on the structure of products are very few, so this study is deemed as a scientific addition to previous studies to link this approach to the product structure of development, Pricing, and quality in the industrial public shareholding companies in Jordan (Aladwan et al., 2018).

### The Study Hypotheses

The study hypothesis can be established as follows:

The Main Hypothesis: There is no statistically significant effect at the significance level of ( $\alpha \leq 0.05$ ) for applying the target cost approach to the product structure of the industrial public shareholding companies in Jordan.

From this central hypothesis, the following sub-hypotheses are established:

- *There is no statistically significant effect at the significance level of ( $\alpha \leq 0.05$ ) for applying the target cost approach to the products' quality.*
- *There is no statistically significant effect at the significance level of ( $\alpha \leq 0.05$ ) for applying the target cost approach to product development.*
- *There is no statistically significant effect at the significance level of ( $\alpha \leq 0.05$ ) for applying the target cost approach to product pricing.*



## Study Methodology

For achieving the objectives of the study and testing its hypotheses, the *Descriptive Analytical Approach (Descriptive)* was used to describe the independent and dependent variables and the *(Analytical)* for analyzing the data that will be obtained through the complete survey of the study sample by distributing the questionnaire among its individuals. The study uses the analytical approach through the study tool (Questionnaire). The study population consisted of Jordanian industrial companies, which reached (56) companies in 2022, according to the monthly statistical periodical of the Amman Stock Exchange (ASE). This study uses different tests to analyze the data and extract results related to the statistical methods, i.e., the descriptive statistic, Cronbach's Alpha Equation, Pearson's Correlation Coefficient, and Simple Linear Regression Analysis.

In collecting data, the study depended on the findings reached through research and studies published in periodicals and scientific journals related to the research subject. The researcher developed a special questionnaire for this study based on the theoretical framework and the results of previous studies (literature), and it was distributed among the study sample.

## The Study Population And Sample

The study group (population) consists of the public shareholding industrial companies enlisted in the Securities Commission, which is (56) companies in 2022, according to the statistical periodical of the Amman Stock Exchange and The Securities Depository Center (Edaa). A sample of (42) companies was selected, and the questionnaire was distributed to The Financial Manager, Production and Sales Managers, and Accountants) in these companies.

Table (1) The relative distribution of the study sample according to demographic characteristics

Demographic characteristics		Frequency Percentage	Frequency	
Qualification	diploma	13.07%	17	
	Bachelor's	69.23%	90	
	Master's	12.31%	16	
	Ph.D	5.38%	7	
Job title	Financial Manager	23.08%	30	
	Production Manager	26.92%	35	
	Sales manager	25.38%	33	
	Accounting	24.62%	32	
Years of Experience	less than five years	10.77%	14	
	Five years to less than 10	37.69%	49	
	10 years to less than 15	26.15%	34	

	15 years and over	25.38%	33	
Scientific specialization	Accounting	46.15%	60	
	Business Management	23.08%	30	
	Banking and Financial Sciences	8.46%	11	
	marketing	% 10	13	
	Another specialty	12.31%	16	

Source: Prepared by the authors (2023)-Field data

### THIRD: STATISTICAL ANALYSIS METHODS:

In this study, the analytical, statistical method adopted, in addition to the descriptive statistics, to demonstrate the impact of applying the target cost approach on the products' structure in the industrial public shareholding companies in Jordan.

The software package (*SPSS*) was used to analyze the data and deduct the findings related to the statistical methods used in the study as follows:

- *The Descriptive Statistic: A description of all study variables through the arithmetic mean, standard deviation, and the highest and lowest values for each variable, in order to describe the opinions of the study sample about the study variables and to determine the importance of the phrases contained in the questionnaire.*
- *Cronbach's Alpha Equation to test the reliability of all data used in measuring the variables included in the study.*
- *Pearson Correlation Coefficient.*
- *Simple Regression Analysis to test the effect of an independent variable on a dependent variable.*

A *Five-Point Likert Scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)* was used. An ordinal scale was adopted for these numbers to give the arithmetic mean, using the ordinal scale of importance, as it was used when analyzing the results.

As to the limits adopted by this study when commenting on the arithmetic average of the variables included in the study model, they are (weak-effect level, medium-effect level, and high-effect level), based on the following equation:

*Category length = (the alternate maximum limit - the alternative minimum limit) / the number of levels*  $(5-1)/3 = 4/3 = 1.33$

Thus, the levels are as follows:

- *Low Impact Level from (1) to (2.33)*
- *Medium Impact Level from (2.34) to (3.67)*
- *High Impact Level from (3.68) to (5)*

#### **FOURTH: NUMBER OF QUESTIONNAIRES DISTRIBUTED AND GATHERED FOR ANALYSIS PURPOSES:**

Table No. (2) shows the number of distributed, gathered, and valid questionnaires for statistical analysis

Table No. (2) The number of distributed, gathered, and valid questionnaires for statistical analysis purposes:

<b>Description</b>	<b>Number</b>	<b>Percentage</b>
Distributed Questionnaires	<b>168</b>	<b>100%</b>
Gathered Questionnaires	<b>141</b>	<b>%83.92</b>
Questionnaires Invalid For Analysis	<b>11</b>	<b>%6.55</b>
Questionnaires Subject To Analysis	<b>130</b>	<b>%77.38</b>

Source: Prepared by the authors (2023)-Field data

The above Table shows that the number of questionnaires distributed amounted to (168) questionnaires to the respondents, whereas (141) questionnaires were gathered, with a percentage of (83.92%). 8130) Questionnaire, i.e. (77.38%), is a statistically-acceptable percentage, as the study results can be generalized.

#### **FIFTH: DISTRIBUTING THE STUDY SAMPLE, ACCORDING TO THE RESPONDENTS' DEMOGRAPHIC CHARACTERISTICS**

Table No. (2) shows the relative distribution of the study sample according to demographic characteristics.

Analyzing data related to the demographic characteristics of the respondents:

It is noted from the above Table concerning academic qualification that the most significant percentage of individuals are holders of a bachelor's degree, amounting to (90) representing a percent of (69.23%). As for experiences, the study sample showed that the percentage of those whose experience ranges from (5 years to less than 10) was the largest, with a percentage of (37.69%). Regarding job titles, the highest percentage was for the production manager, representing a percentage of (26.92%) for each of them. Regarding scientific specialization, we note that the highest percentage is for (Accounting) specialization, amounting to (46.15%).

Therefore, the analysis of the demographic factors indicates that the respondents have the ability and complete understanding to answer the questionnaire questions, which is positively reflected in obtaining accurate and correct results that benefit decision-makers and those concerned with the study.

**SIXTH: THE STABILITY OF THE STUDY TOOL:**

To verify the stability of the study tool, *Cronbach's Alpha Equation* was used, where the value of the stability coefficient between the items of the independent variable was (0.864), and between the items of the product structure variable (0.852) range between (0.701 and 0.864), thus indicating the validity of the questionnaire for its purpose, as well as the excellent stability of the study tool because all values of the stability coefficient are greater than 70%, which is unanimously agreed upon as indicating the stability of the study tool, as shown in Table No. (3):

Table No. (3)

variable	Cronbach alpha value	Number of items	Dimension
<b>Independent variable Target cost approach</b>	<b>0.864</b>	<b>10</b>	<b>Target cost approach</b>
<b>Dependent variables )product structuring(</b>	<b>0.709</b>	<b>7</b>	Quality
	<b>0.774</b>	<b>7</b>	Development
	<b>0.779</b>	<b>9</b>	pricing
	<b>0.852</b>	<b>16</b>	All paragraphs of the dependent variable

Source: Prepared by the authors (2023)-Field data

**SEVENTH: PEARSON CORRELATION COEFFICIENT**

It measures the linear relationship between the variables, with a range of -1 to 1. This value indicates the strength of the relationship between the variables, and the value of *Zero* indicates no correlation between the variables. In contrast, the correlation of 1 indicates a strong positive relationship, and the value -1 indicates a Strong negative relationship between variables.

Table (4): arson correlation coefficiente

<b>Dependent variables (product structure)</b>	<b>(The independent variable) the target cost input</b>
<b>products' quality</b>	<b>0.681</b>
<b>product development</b>	<b>0.754</b>
<b>product pricing</b>	<b>0.812</b>

Source: Prepared by the authors (2023)-Field data

It is noted from the bilateral Pearson correlation coefficients between the pricing approach based on the target cost and the elements of product structuring that there are strong and statistically significant relationships.

Table (5) Relationships between the independent variable and the dependent variables

variables	strength of relationship	level of statistical significance,	Correlation coefficient,
Target cost entrance with product quality	High	0.000	0.681
Target costing input with product development	High	0.000	0.754
Target costing input with product pricing	High	0.000	0.812

The correlation coefficient is statistically significant at the level of significance  $\leq 0.05$   $\alpha$  \*

Source: Prepared by the authors (2023)-Field data

## EIGHTH: DESCRIPTIVE RESULTS

Arithmetic means and standard deviations were extracted for each variable of the study and its dependent paragraphs, rank, and degree of agreement.

The target cost approach (independent variable)

Table No. (6) Arithmetic Means And Standard Deviations of The Target Cost Variable (Independent Variable):

No.	Paragraphs.	Arithmetic mean	standard deviation	rank	degree of agreement
1.	Applying a target cost approach helps the company achieve plenty of cost savings.	3.90	0.71	9	Medium
2.	The company uses the target cost approach in order to produce products with specific specifications	3.52	0.68	4	High
3.	Applying the target cost approach contributes to solving the design problems of the product	3.88	0.78	6	High
4.	The company seeks to reduce defective products percentage through a target-cost approach	3.79	0.86	5	High
5.	The target cost approach helps determine the target profit margin the company seeks to achieve	3.86	0.89	10	Medium
6.	The target cost approach supports product quality by improving the relationship between the company and suppliers	3.47	0.98	8	Medium
7.	Applying the target cost approach contributes to the design of new products in the least time	3.58	0.93	7	High
8.	Applying the target cost approach helps in improving the research and development process	3.79	0.91	2	High
9.	Using the target cost approach, the company can determine the	3.95	0.94	1	High

	<i>profit margin of the product before production</i>				
10.	<i>Applying the target cost approach contributes to setting the lowest price for the product</i>	3.98	0.77	3	High
	<i>All Paragraphs of the Target Cost Approach</i>	3.77	0.57		9

Source: Prepared by the authors (2023)-Field data

The data in Table No. (6) indicates the importance of applying the target cost approach to the industrial companies in Jordan, whereas the total arithmetic means was (3.77), with a standard deviation of (0.57). The arithmetic means of the items of the independent variable ranged between (3.47 and 3.98), and at the level of the items, there were (7) items with a high degree and (3) items with a medium degree. The highest degree of approval was for Paragraph No. (10) "The application of the target cost approach contributes to setting the lowest price for the product" in the first place with an arithmetic mean of (3.98), while Paragraph No. (6): "The target cost approach supports product quality by improving the relationship between the company and suppliers" came as the last one, with an arithmetic mean of (3.47)

### Product Structure (Dependent Variable)

#### Products quality

Table No. (7) Arithmetic Means And Standard Deviations of The Product Quality Variable (Dependent Variable)

No.	Paragraphs.	Arithmetic mean	standard deviation	rank	degree of agreement
1.	<i>The company is interested in maintaining equipment and machines periodically to maintain their quality</i>	4.12	1	1	High
2.	<i>The company seeks to use methods that match the quality of products with the expectations of customers</i>	3.47	6	6	Medium
3.	<i>The company is interested in implementing training programs related to quality to enhance awareness about the importance of quality in the company</i>	3.12	7	7	Medium
4.	<i>The company observes international quality standards</i>	4.08	2	2	High
5.	<i>Decision makers and implementers have sufficient knowledge of the principles of quality</i>	3.88	3	3	High
6.	<i>The company adopts quality policies to ensure customer satisfaction and loyalty</i>	3.79	5	5	High
7.	<i>The company is interested in examining and testing the raw</i>	3.82	4	4	High

	<i>materials involved in the production process to ensure the production of high-quality medical products.</i>				
<i>All Paragraphs of Product Quality</i>		<i>3.75</i>	<i>0.53</i>	<i>-</i>	<i>-</i>

Source: Prepared by the authors (2023)-Field data

The data in Table No. (8) indicates the dependent variable importance, the products' quality, as the total arithmetic mean was (3.75) with a standard deviation of (0.53), and the arithmetic means for the dependent variable items ranged between (3.12 and 4.12). At the level of the items, there were (5) items high and two paragraphs with a moderate degree. The highest degree of approval was given to Paragraph No. (1) "The company is interested in maintaining equipment and machines periodically to maintain its quality," coming as the first, with an arithmetic average of (4.12), while Paragraph No. (3) "The company is interested in implementing quality-related training programs to enhance the awareness of Quality importance in the company" was the last one, with an arithmetic mean of (3.12).

### Product development

Table No. (8) Arithmetic Means And Standard Deviations of The Product Development Variable (Dependent Variable)

N o.	<i>Paragraphs</i>	<i>Arithmetic mean</i>	<i>standard deviation</i>	<i>rank</i>	<i>degree of agreement</i>
	<i>The company is concerned with revising the product design continuously for developing it.</i>	<i>4.16</i>	<i>0.62</i>	<i>1</i>	<i>High</i>
	<i>The company is concerned with revising the product design continuously for developing it.</i>	<i>3.90</i>	<i>0.81</i>	<i>3</i>	<i>High</i>
	<i>The company endeavors to select the most suitable design of the developed product.</i>	<i>3.56</i>	<i>0.76</i>	<i>6</i>	<i>Medium</i>
	<i>The company endeavors to collect the information necessary for the product development.</i>	<i>3.70</i>	<i>0.89</i>	<i>5</i>	<i>High</i>
	<i>The company endeavors to develop the products through comparing among the company abilities and the customers' desires.</i>	<i>3.44</i>	<i>0.74</i>	<i>7</i>	<i>Medium</i>
	<i>Conducting researches and studies for product development, within certain criteria at certain levels.</i>	<i>3.92</i>	<i>0.83</i>	<i>2</i>	<i>High</i>
	<i>The company endeavors to develop the product, within certain criteria at certain levels.</i>	<i>3.75</i>	<i>0.78</i>	<i>4</i>	<i>High</i>
<i>All Paragraphs of The Product Development</i>		<i>3.78</i>	<i>0.51</i>		<i>High</i>

Source: Prepared by the authors (2023)-Field data

High and two medium paragraphs. The data in Table No. (9) indicates the importance of the variable dependent on product development, as the total arithmetic mean was (3.78) with a standard deviation of (0.58). The highest degree of approval was for Paragraph No. (1) "The company cares about the costs of reviewing the design of the product continuously for its

development" as the first one, with an arithmetic mean of (4.16), while Paragraph No. (5) came, "The company aims to develop successful products by balancing the company's ability and customers' needs," as the last one, with an arithmetic mean of (3.44).

### Product pricing

Table No. (9) Arithmetic Means And Standard Deviations For Product Pricing Variable (Dependent Variable)

No.	Paragraphs	Arithmetic mean	standard deviation	rank	degree of agreement
1.	<i>The company is holding scientific seminars and training courses for the company's employees to clarify the basic requirements for applying the pricing approach based on the target cost.</i>	3.60	0.89	6	Medium
2.	<i>Pricing products according to the target cost method contributes to increasing sales volume.</i>	3.78	0.86	5	High
3.	<i>Product pricing based on the target cost approach contributes to the company gaining credibility with its customers.</i>	3.82	0.89	2	High
4.	<i>Applying the pricing approach based on the target cost contributes to focusing on the method of continuous improvement.</i>	4.18	0.88	9	High
5.	<i>The company takes into account flexible pricing policies</i>	3.58	0.77	7	Medium
6.	<i>The company takes into account the possible reduction possibilities when determining the price based on the competitive market price</i>	3.74	0.89	1	High
7.	<i>The application of pricing methodology based on target cost contributes to improving competitiveness.</i>	4.20	0.63	4	High
8.	<i>The approved pricing policy is commensurate with the volume of supply and demand in the market</i>	3.90	0.90	3	High
9.	<i>The technical development and the spread of the automation phenomenon in the company facilitate applying the pricing approach based on the target cost.</i>	3.95	0.87	-	High
<i>All Paragraphs of product quality</i>		3.90	3.86		

Source: Prepared by the authors (2023)-Field data

The data in Table No. (9) indicates the importance of the dependent variable, the Pricing of products, as the total arithmetic mean was (3.86) with a standard deviation of (0.51), and the arithmetic means for the items of the dependent variable ranged between (3.58 and 4.20), and at the level of items it was (7) High paragraphs and two medium paragraphs. The highest degree



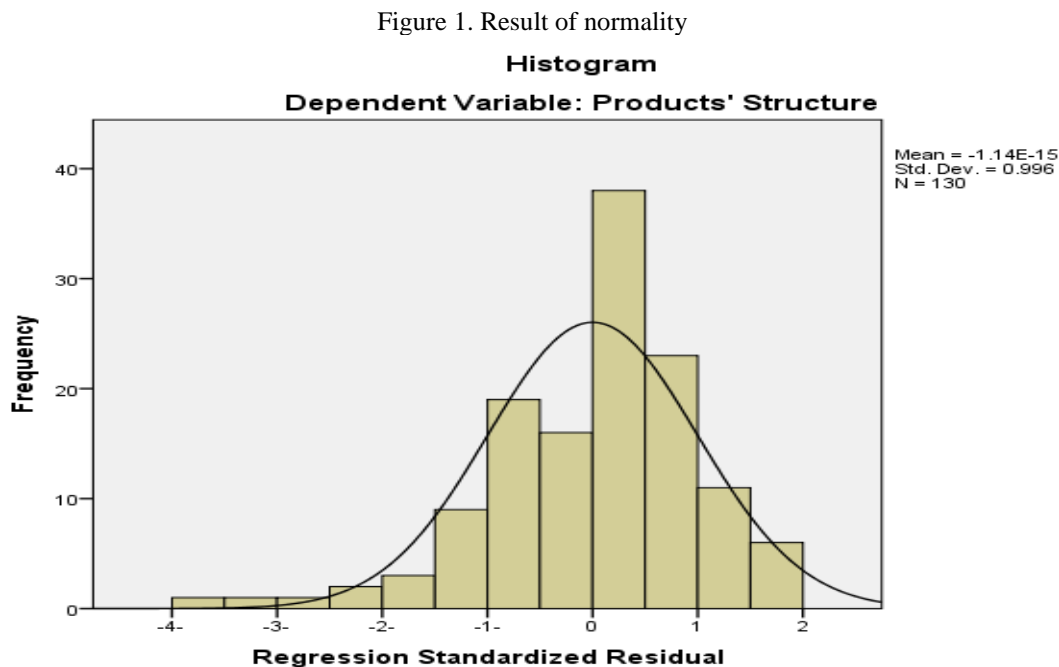
of approval was for Paragraph No. (7) "The application of pricing methodology based on target cost contributes to improving competitiveness," coming as the first one with an arithmetic average of (4.20), while Paragraph No. (5) coming as the last one, with an arithmetic average of (3.58) and states that The company takes into account flexible pricing policies.

## NINTH: TESTING THE STUDY HYPOTHESES

Simple regression analysis was used to test the study's central hypothesis and two sub-hypotheses.

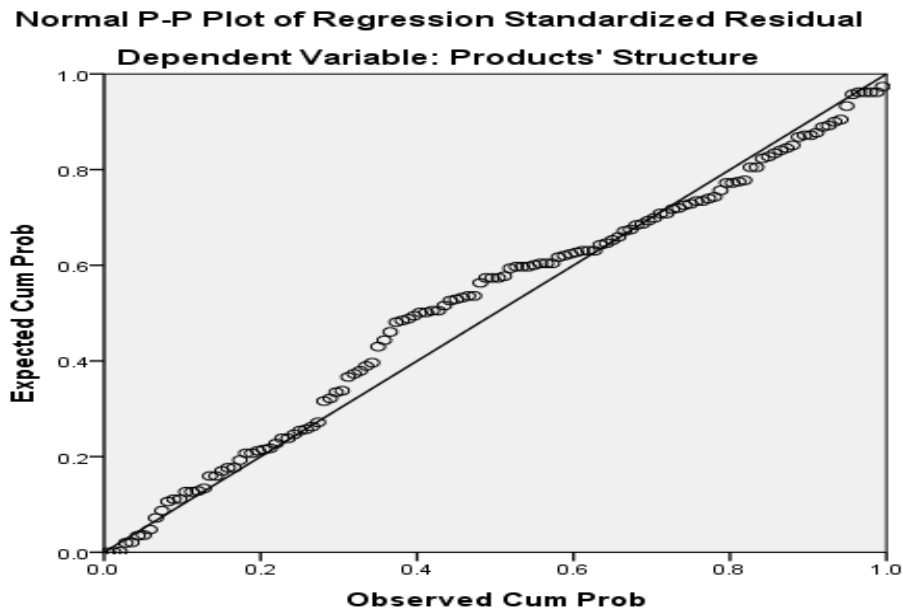
### THE MAIN HYPOTHESIS:

There is no statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to product structure (quality - development - pricing) in the industrial public shareholding companies in Jordan. Statistical findings validated that there is a linearity relationship between (IVs) and (DV) as well as dispersion and variation in the sample responses (Homoscedasticity) after collecting the final data from the study sample, these results shown in Figure 1,2 and 3:



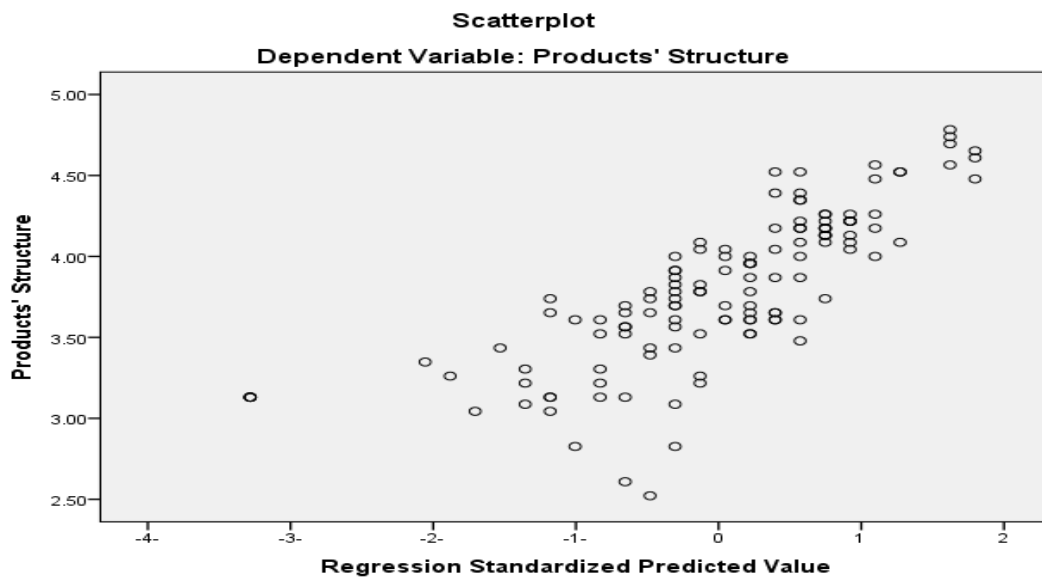
Source: Prepared by the authors (2023)-Field data

Figure 2. Result of linearity



Source: Prepared by the authors (2023)-Field data

Figure 3. Result of scatterplot



Source: Prepared by the authors (2023)-Field data

Table No. (10) Results of Simple Regression Analysis To Test The Effect of Applying The Target Cost Approach on Product Structure (Quality - Development - Pricing)

Independent Variable	Dependent Variable	Calculated (F)-Value	Statistical Significance	Correlation Coefficient R	Interpretive Value R <sup>2</sup>	Regression Coefficient B	Calculated (F)-Value	Significance Level T
Target Cost Approach	Product Structuring (Quality, Development)	240.778	0.000 *	0.808	0.653	0.681	15.517	0.000 *

	<i>ent, Pricing),</i>							
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\* The effect is statistically significant at the level of ( $\alpha \leq 0.05$ )

Source: Prepared by the authors (2023)-Field data

The results of the analysis indicate the acceptance of the statistical model, as the calculated (F) value reached (240.778) and has a statistical significance (0.000). The results of the simple regression analysis also indicate that there is a statistically significant effect of the target cost approach in the product structure (quality - development - pricing), as it reached The calculated (T) values for it (15.517). Their statistical significance is less than (0.05). The value of the correlation coefficient (0.808) indicates a high-strength correlation between the target cost approach and product structuring (quality - development - pricing). The explanatory value (0.653) indicates that (65.3%) of the variation in product structure is due to the target cost Approach. The value of B reflects the impact of the target cost approach on product structuring.

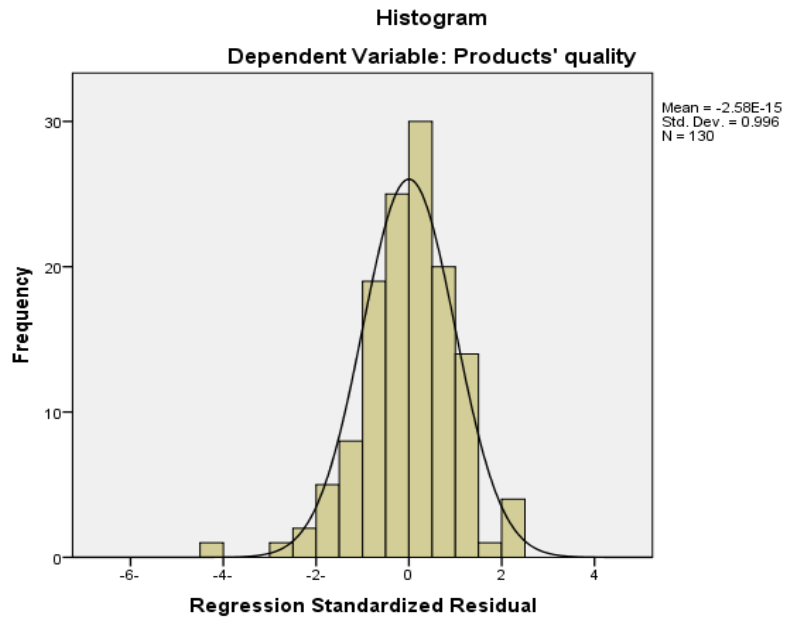
Accordingly, the central null hypothesis of the study is rejected, and the alternative hypothesis is accepted, stating:

There is a statistically-significant effect on the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach on product' structure (Quality - Development - Pricing) in the industrial public shareholding companies in Jordan.

### **The First Sub-Hypothesis**

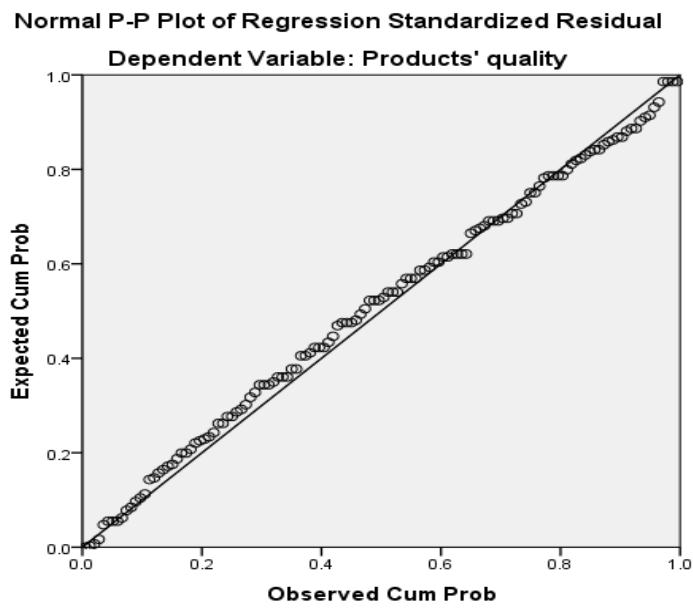
Ho1-1: There is no statistically-significant effect on the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to the quality of products. Statistical findings validated that there is a linearity relationship between (IVs) and (DV) as well as dispersion and variation in the sample responses (Homoscedasticity) after collecting the final data from the study sample, these results shown in Figure 4,5 and 6:

Figure 4. Result of normality



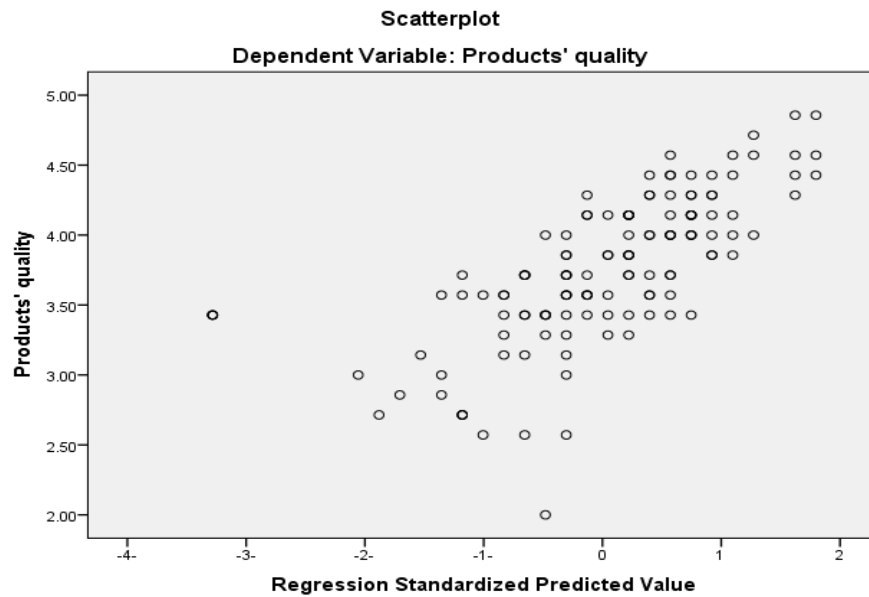
Source: Prepared by the authors (2023)-Field data

Figure 5. Result of linearity



Source: Prepared by the authors (2023)-Field data

Figure 6. Result of scatterplot



Source: Prepared by the authors (2023)-Field data

Table (11) shows the results of the simple regression analysis for testing the effect of applying the target cost approach on the quality of products:

Table No. (11) Results of Simple Regression Analysis To Test The Effect of Applying The Target Cost Approach On Product Quality

Independent Variable	Dependent Variable	Calculated (F)-Value	Statistical Significance	Correlation Coefficient R	Interpretive Value R <sup>2</sup>	Regression Coefficient B	Calculated (F)-Value	Significance Level T
Target Cost Approach	Product Quality	110.583	0.000 *	0.681	0.463	0.628	10.516	0.000 *

\* The effect is statistically significant at the level of ( $\alpha \leq 0.05$ )

Source: Prepared by the authors (2023)-Field data

The results of the analysis indicate the acceptance of the statistical model, as the calculated (F) value reached (110.583) and has a statistical significance (0.000). The results of the simple regression analysis also indicate that there is a statistically significant effect of the target cost approach on the quality of products, as the calculated (T) values for it reached (10.516), which is higher than the tabular (T) value of (1.96) - the minimum value of (T) to have an effect - and its statistical significance is less than (0.05). The value of the correlation coefficient (R) also indicates a high-strength correlation between the target cost approach and the quality of the products, amounting to (0.681). The explanatory value (R<sup>2</sup>) - which represents the proportion of explanation in the variance of the dependent variable - indicates that the target

cost explains (46.3%) of the variance in the quality of products. In terms of the impact of the target cost on the quality of the products, we note from the value of the regression coefficient (B) - which represents the strength of the linear relationship between the two variables, that the greater the relationship, the stronger the relationship - amounting to (0.628). 0.628).

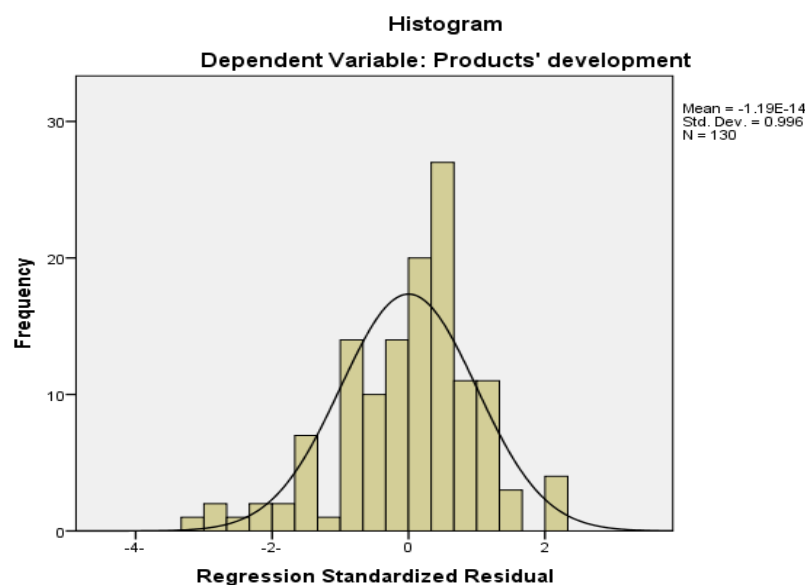
Accordingly, the null hypothesis is rejected, and the alternative hypothesis is accepted:

Ho1-1: There is a statistically-significant effect on the level of significance ( $\alpha \leq 0.05$ ) for the application of the target cost approach on the products' quality

### The second sub-hypothesis:

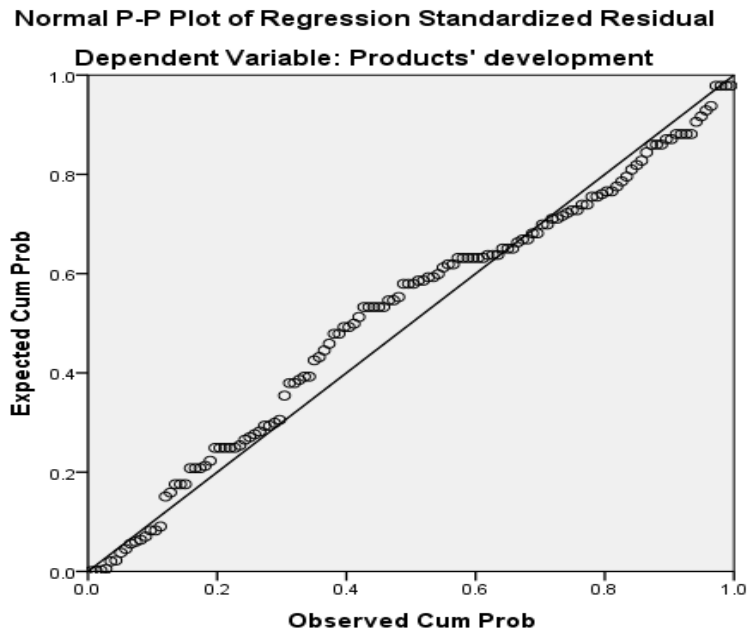
Ho1-2 There is no statistically-significant effect on the significance level ( $\alpha \leq 0.05$ ) for applying the target cost approach to product development. Statistical findings validated that there is a linearity relationship between (IVs) and (DV) as well as dispersion and variation in the sample responses (Homoscedasticity) after collecting the final data from the study sample, these results are shown Figure 7,8 and 9:

Figure 7. Result of normality



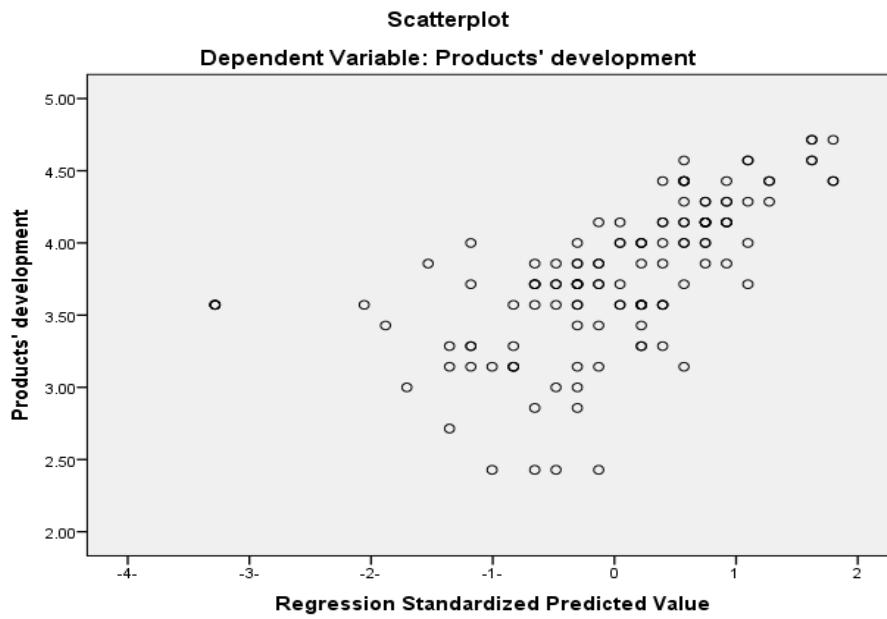
Source: Prepared by the authors (2023)-Field data

Figure 8. Result of linearity



Source: Prepared by the authors (2023)-Field data

Figure 9. Result of scatterplot



Source: Prepared by the authors (2023)-Field data

Table (12) shows the results of the simple regression analysis to test the impact of applying the target cost approach on product development:

Table (12) The Results of A Simple Regression Analysis To Test The Impact of Applying The Target Cost approach on Product Development

Independent Variable	Dependent Variable	Calculated (F)-Value	Statistical Significance	Correlation Coefficient R	Interpretive Value R <sup>2</sup>	Regression Coefficient B	Calculated (F)-Value	Significance Level T
Target Cost Approach	Product Development	76.772	0.000*	0.612	0.375	0.544	8.762	0.000*

\* The effect is statistically significant at the level of ( $\alpha \leq 0.05$ )

Source: Prepared by the authors (2023)-Field data

The results of the analysis indicate to accepting the statistical model, as The Calculated (F) Value reached (76.772), with a statistical significance (0.000). Also, the results of the simple regression analysis refers to that there is a statistically-significant effect of the target cost approach in the product development, whereas its Calculated (T) Values reached (8.762). It is higher than the Table (T) value which is (1.96) – the (T) minimum value, so that it has an effect. Its statistical significance is less than (0.05). As well, the value of the correlation coefficient (R) indicates that there is a high-strength correlation between the target cost approach and the product development amounting to (0.612). The explanatory value (R<sup>2</sup>), representing the explanation percentage in the difference of the dependent variable, also indicates that the target cost explains (37.5%) of the difference in the product development. As to the impact of the target cost on the product development, we notice from the value of the regression coefficient (B), which represents the strength of the linear relationship between both variables, the higher it is, the stronger the relationship is, amounting to (0.544).), i.e. the higher the value of applying the target cost approach is in one unit, the higher the products development is, with a value of (0.544).

Accordingly, the null hypothesis is rejected, and the alternative hypothesis is accepted:

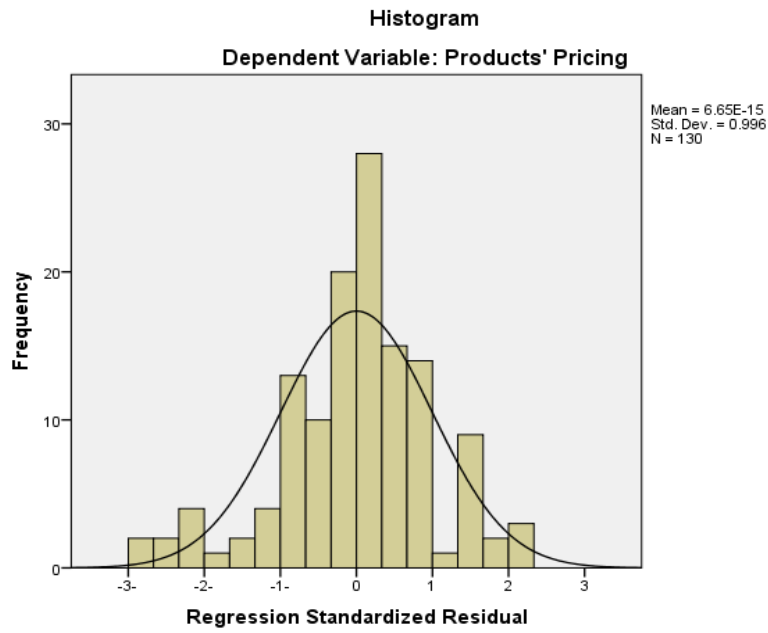
Ho1-2: There is a statistically-significant effect on the significance level ( $\alpha \leq 0.05$ ) for applying the target cost approach to product development.

### The Third Sub-Hypothesis:

Ho1-3 There is no statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to product pricing. Statistical findings validated that there is a linearity relationship between (IVs) and (DV) as well as dispersion and variation in the sample responses (Homoscedasticity) after collecting the final data from the study sample, these results are shown Figures 10,11 and 12:

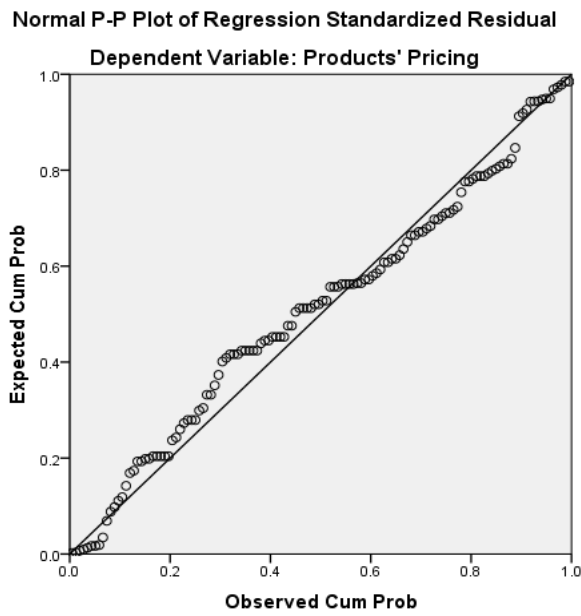


Figure 10. Result of normality



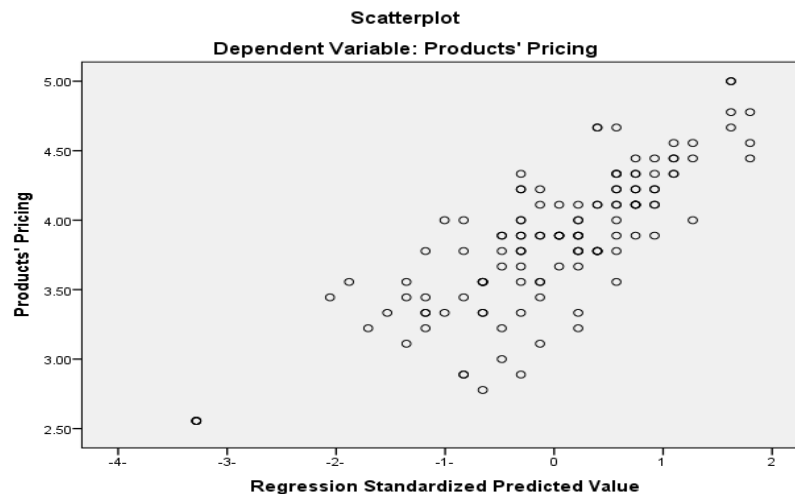
Source: Prepared by the authors (2023)-Field data

Figure 11. Result of linearity



Source: Prepared by the authors (2023)-Field data

Figure 12. Result of scatterplot



Source: Prepared by the authors (2023)-Field data

Table (13) shows the results of the simple regression analysis to test the effect of applying the target cost approach on product pricing:

Table (13) The Results of A Simple Regression Analysis To Test The Impact of Applying The Target Cost approach on Product Pricing

Independent Variable	Dependent Variable	Calculated (F)-Value	Statistical Significance	Correlation Coefficient R	Interpretive Value R <sup>2</sup>	Regression Coefficient B	Calculated (F)-Value	Significance Level T
Target Cost Approach	Product Pricing	247.598	0.000 *	0.812	0.659	0.072 *	15.735	0.000 *

\* The effect is statistically significant at the level of ( $\alpha \leq 0.05$ )

Source: Prepared by the authors (2023)-Field data

The results of the analysis indicate the acceptance of the statistical model, as the calculated (F) value, was (247.598) and has a statistical significance (0.000). The results of the simple regression analysis also indicate that there is a statistically significant effect of the target cost approach in product pricing, as the calculated (T) values for it reached ( 15.735), which is higher than the tabular (T) value of (1.96) - the minimum value of (T) to have an effect - and its statistical significance is less than (0.05). The correlation coefficient (R) value indicates a high-strength correlation between the target cost approach and product pricing, which is (0.812). The explanatory value (R<sup>2</sup>) - which represents the proportion of explanation in the variance of the dependent variable - indicates that the target cost explains (65.9%) of the variance in product pricing. In terms of the impact of the target cost on the Pricing of products, we note from the value of the regression coefficient (B) - which represents the strength of the

linear relationship between the two variables, and the greater the relationship, that the stronger the relationship - amounting to (0.722). 0.722).

Accordingly, the null hypothesis is rejected, and the alternative hypothesis is accepted:

Ho1-3: There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to product pricing.

Accordingly, the null hypothesis is rejected, and the alternate hypothesis is accepted.

1. *Ho1-1: There is a statistically-significant effect on the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to the quality of products.*

2. *Ho1-2: There is a statistically significant effect on the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to product development.*

3. *Ho1-3: There is a statistically significant effect on the level of significance ( $\alpha \leq 0.05$ ) for applying the target cost approach to product pricing*

## THE MAIN STUDY FINDINGS

- Reaching the target cost is achieved by focusing on the first jobs at the beginning of the value chain, and the main reason for this is that the leading causes of cost (Cost Drivers) are in the early stages of product development and design.
- The application of the target cost approach in the industrial public shareholding companies in Jordan contributes to developing and improving the quality of products, as well as the most appropriate Pricing, by pricing products according to the target cost approach, which contributes to increasing sales volume, taking into consideration the possible reduction possibilities when determining the price is based on the competitive market price, continuously reviewing the design of the product for its development, besides maintaining the devices and machines periodically to maintain their quality, taking into account the international standards of quality, this is evident through the high arithmetic mean of the answers of the study sample, where the pricing component came primarily with an arithmetic average of (3.86). The standard deviation was (0.51), then the development component came in the second degree with an arithmetic mean of (3.78) and a standard deviation of (0.58). The quality component came in the third degree, with an arithmetic mean of (3.75) and a standard deviation of (0.53).
- The simple regression findings showed a statistically significant effect of applying the target cost approach to product structuring, as the correlation coefficient value was (0.808).

- The simple regression findings showed a statistically significant effect of applying the target cost approach to product pricing, as the correlation coefficient value was (0.812).
- The simple regression findings showed a statistically significant effect of applying the target cost approach to product development, as the correlation coefficient was (0.742).
- The simple regression findings showed a statistically significant effect of applying the target cost approach on the quality of products, as the correlation coefficient value was (0.681).
- The findings of the study confirm the existence of a statistically-significant effect of the target cost approach on products' structure (Quality - Development - Pricing) in the industrial public shareholding companies in Jordan, whereas the calculated (T) values thereof were respectively (10.516, 13.786, 15.735), and their statistical significance was less than (0.05).

## CONCLUSION AND DISCUSSION

The scope of this study may be increased to examine the crucial relationship between target costing and other cost components in the manufacturing and service sectors. Target costing methodologies also have a proven track record of achieving cost-competitive advantages among competitive organizations by comparing costs with the use of target costing at various phases of production and the service sector. Future research may attempt to activate the dimensions of the target costing method and introduce variables into one or more models of direct and indirect relations using the path analysis method in order to achieve competitive advantages and to promote the company in general and the Jordanian context in particular (Path Analysis). The results of the regression analysis also indicate that there is a statistically significant effect of the target cost approach on the quality of products, with ( $R^2$ ) (46.3%) which represents the proportion of explanation in the variance of the dependent variable. The findings of the study also highlighted that there is a statistically-significant effect of the target cost approach in product development with ( $R^2$ ) with (37.5%) which indicates that the target cost explains (37.5%) of the difference in the product development. The results also indicate that there is a statistically significant effect of the target cost approach in product pricing with R) value indicating a high-strength correlation between the target cost approach and product pricing, which is (0.812).

The study recommended that it is necessary to develop successful products and price them based on the target cost by balancing the company's ability and customers' needs, as well as using methods that lead to consistency and harmony between products' quality and customers' expectations. The study also recommended focusing on qualifying workers by developing programs that profoundly tackle the approaches and modern systems of costs, such as the target costing system.

According to the findings, the study recommends the following:

- It is necessary to focus on the first jobs at the beginning of the value chain, especially since the leading causes of cost (Cost Drivers) are in the early stages of development and design.
- Seeking to develop successful products by balancing the company's ability with customers' needs.
- The study recommends using methods that match the products' quality with customers' expectations.
- Paying attention to qualifying workers by developing programs that deal profoundly with the approaches and modern systems of costs, such as the target cost system, as these approaches and accounting systems will be intensively adopted in the future for their outstanding role in developing product performance, Pricing and improving its quality.
- The study recommends investing in the research and development process using the target cost approach, which contributes to designing new products in the shortest possible time, pricing them, and improving their quality.
- The study recommends that the public industrial companies in Jordan keep pace with new developments in the field of Pricing and product structure.
- Conducting more studies on this approach and the possibilities of applying it to other sectors or the same sector from a different or complementary approach.

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