Target Costing Application and its Impact on Financial Performance of Manufacturing Companies in the North Rift Economic Block, Kenya

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ABSTRACT

This study aimed at establishing target costing application impact on financial performance of manufacturing Companies in the North rift economic block. Explanatory research design was adopted with stratified random sampling technique utilized in collecting data by use of questionnaire, comprising of closed ended questions on a 5-point Likert scale. Study sample size was 220 (53 auditors and 167 accountants) from 48 manufacturing industries. Internal consistency of the variables and construct validity was tested and checked by use of Cronbach alpha and factor analysis respectively. Regression analysis was applied in testing hypothesis whose result indicated that target costing (β =0.146, P= 0.008) has a statistical significant effect on financial performance of manufacturing companies in the North Rift Economic Block. This study concluded that target costing influences financial performance positively by enhancing competitiveness on cost. Seemingly, it boosts profitability through cost reduction and target price determination in line with desired profit. Likewise, the study recommends application of target costing by manufacturing companies to help them navigate through current economic constraints. Consequently, this process would assist in cost management, realization of target production volume, setting up of target price and finally actualization of target profit.

Key words: Target costing, financial performance, target cost reduction, target production volume, target selling price.

INTRODUCTION

Background

The origin of target costing is traced back in 1960's in Japan while being a secret for years. Japanese companies' competitive superior position was influenced by factor of target costing. Equally great effort was exerted to take this technique to Western companies. Several big companies in Europe and North America gave a trial to target costing adoption in order to boost cost management and gain competitive advantage. As a consequence, several target costing variations got developed and hence its application in different countries (Feil, Yook & Kim, 2004).

To achieve profitability requirements, most Japanese companies were forced to squeeze costs due to long recession which arose as a result of major event in financial sector crisis (Fell et al,2004). According to Ballard & Reiser, (2004), target costing is used by manufacturers to increase their profitability. Implementation of target costing would appear to be simple, nevertheless this simplicity should not create an assumption that its implementation would give favorable results. Adoption of target costing consistently

in an organization is the key to success. Target price, target cost and target profit should be reinforced by target costing philosophy such as top management leadership, team orientation, commitment to work, mutual trust management accounting and information network (Feil et al,2004). Target costing performance evaluation is applied to estimate the degree at which this technique is attained. If not achieved, investigation will be launched to determine the cause and the point where the gap is. Through investigation, effectiveness of activities of target costing is also evaluated (Monden & Hamada, 2001). Currently, it is mandatory for companies to attain products which are cost related, quality, cost and practicality targets simultaneously with uttermost possible level. This will enable them create competitive advantage that is sustainable via production of quality and operational products. It should be in line with customer demand and market determined (Kocsoy, Gurdal & Karabayir, 2008).

Globally, Alkabaji, (2023) carried out a study on impact of target costing application and continuous advancement on achievement of sustainable competitive advantage to industrial companies in Palestine. The study employed descriptive analysis method, administering questionnaires to 415 companies. The finding of the study revealed that high target costing application dictates target selling price in achieving specific target profit.

In Africa, Slater, (2010), did a study on target costing being a strategic technique in motor industries in South Africa. Empirical survey method was adopted with both quantitative and qualitative approach. Data collection instrument was the questionnaire with closed ended and open ended questions. These questions provided data for the above approaches respectively. The result of the study revealed that target costing increases cost competitiveness. Similarly, the findings indicated that this technique prevented the launching of unprofitable products.

Locally, Abura & Litunya, (2022) investigated the effect of target costing on financial performance of Kenyan cement manufacturing industry. Qualitative and quantitative method of research was adopted with target population of 100 middle level management. Primary source of data was acquired by use of questionnaire consisting of structured questions. Analysis of quantitative data was performed by the application of spss software and descriptive analysis. The findings of the study showed that target costing has a significant relationship with financial performance of Kenyan manufacturing industry.

Statement of the problem

Several managers consider target costing as a mere accounting verb with minimal relevancy to marketing as well as manufacturing. They fail to give recognition to target costing concept as implemented by manufacturers. Seemingly, absence of incentive for further cost reduction after achieving target costs is considered as a setback in target costing (Slater, 2010). Empirical review reveals that though target costing application enhances investment return and cost reduction, it is lowly applied in Africa. (Imeokpavia and Adebisi, 2014). Based on the above factors, there is a need for research study to establish why target costing has been successfully applied in other Continents and not in Africa. This study therefore seeks to evaluate target costing application impact on financial performance of manufacturing industries in the North Rift Economic Block.

Objective of the Study

The main objective of the study was to evaluate the impact of target costing on financial performance of manufacturing companies in the North Rift Economic Block.

Research Hypothesis

$H_{01:}$ Target costing application has no significant impact on financial performance of manufacturing companies in the North Rift Economic Block.

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LITERATURE REVIEW

Financial Performance

Allen & Rai, (1996) defines financial performance as an agent of measurement on how accurately a company may utilize its principal assets to get revenues. According to Aktan & Bulut, (2008), financial performance is defined as the ability of a firm in creating new resources through various financial activities for a specific period of time. Performance refers to an achievement or productive signal of a management. In order to examine financial performance, determination of company's value should be done using ratio measurements (Daryanto, Wijaya & Renatauli, 2020). There are key financial performance measures referred to as financial KPIs applied by manufacturing companies to gauge their financial health. They classified into ratios like profitability, leverage, efficiency and liquidity ratios (Nandy and Nandy, 2022).

Target Costing

Target costing is basically a support system for the process of cost reduction in designing phase of general new model and development. Features of target costing consist of two main processes classified as planning specifications meeting customer's needs, cost establishment via target selling of new product and target profit. It also entails realization of target cost prices through the application of value engineering (VE) and comparing target cost versus attained cost (Monden & Hamada, 1991). Similarly, Ax, Greve & Nilsson, (2008). asserts that target costing is a procedural planning process for cost reduction of new products, target profit margins, new product offerings and sales market price. Target costing tool assist in cost reduction and control in that it decreases costs prior to them being locked in costs management from invention stage eventually increasing possibility of cost reduction (Fah & Feh,2016).

Target costing has experienced criticism from different scholars. Some scholars have argued that its initiation needs several organizational over all in various functional areas. Secondly, Cost management involves prolonged working hours which results to teamwork pressure.

METHODOLODY

Research Design

Explanatory research design was utilized in this study because of its suitability in establishing the correlation between the response and the predictor variables (Leavy,2017).

Study Location

North rift economic block situated in the rift valley part of Kenya was the study location because it is an industrial hub consisting of various manufacturing companies as shown on **Table 3.1.** The study commenced on 5th December, 2021 and ended on 10th February,2022 targeting manufacturing industries in 8 counties of the region.

Target Population

Kenya Association of Manufacturers website, (2020) indicated that there are a total of 48 manufacturing industries in North Rift Economic Block. These included production and processing industries such as grain millers, steel millers, Dairy processors, wood and plastics, beverages and water, textile and leather, building and construction, Animal feeds, cosmetics, paint, iron sheets, sugar and tea factories with respondents being

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auditors and accountants This study involved 118 auditors and 372 accountants adding to a target population of 490. The target population distribution is listed in the **table 3.1**.

Sampling Technique and Sample size

The study applied stratified sampling technique. According to Hanneman & Riddle, (2012), this technique involves splitting of population in groups or strata on the basis of pattern which is known. Similarly, Sherri, (2009) asserts that stratified sampling technique ensures full representation of all strata within the population. This population was divided into homogeneous groups referred to as strata. The study involved a sample size of 220 consisting 53 auditors and 167 accountants. Appropriate sample size is usually acquired using various methods or formulae and in this case the researcher applied the Israel formula to calculate the sample size:

$n=N/ [1+N (e)^2]$

Where n = Sample size

N = Population size

e = confidence level (0.05)

Thus $n = 490/ [1+490(0.05)^2] =220$

The sample size for each strata was derived by multiplying the proportion for each stratum by sample size of the total population and dividing it by the number of total target population (Hanneman, Kposowa & Riddle, 2012). The results are illustrated in the **table 2.1 above.**

Table 3.1 Categories of manufacturing industries and target population

Strata	**Target population**	**Sample Size $n_i = (n \underline{N_I})/5$**
Grain Millers	40	18
Steel Millers	14	9
Textile and Leather	12	5
Plastic	50	23
Wood	70	31
Beverage and Drinks	100	45
Animal feeds	75	34
Dairy products	20	9
Paints	15	5
Cosmetics	14	6
Building and Construction	30	14
Sugar	15	6
Tea	25	11
Iron Sheet	10	5
Total	**490**	**220**

Source: Adopted from NOREB Website, (2020) and Modified by the researcher

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Data Collection Instrument

Primary data was used to collect information using questionnaire with closed ended questions. The questions were guided by study objectives adopted from (Imeokparia & Adebisi, 2014) and (Kozakai & Tasaka, 2019) with few modifications to suit the current study. 5-point Likert scale was applied to seek the opinion of the respondents in relation to their view on the statement on the questionnaire (Quinlan, Zikmund, Babin, Carl & Griffin, 2015).

RESULT

4.2 Response Rate

The researcher distributed the questionnaires randomly to the accountants and auditors which was finally sorted out to establish the number of accountants and auditors who filled the questionnaires. A total of 232 questionnaires were distributed but only 220 questionnaires were filled. This study took a period of two months from 5th December to 10th February, 2022.

Table 3.1 Response Rate Analysis

Response	**No. of questionnaires**	**Percentage % rate**
Returned questionnaires	220	95%
Un returned questionnaires	12	5%
Total	**232**	**100%**

Source: Research, (2022).

Demographic Information

Accountants and auditors were the respondents in this study. The findings indicated that the accountants had the majority respondents with 75.9% while the auditors were the minority with 24.1%. The study results indicated that the respondents were professionals and therefore assured the researcher of the reliability of data acquired.

The respondent's education qualification according to the finding were as follows, respondents with diploma were 19.1%, undergraduate were 49.1%, master's level were 7.7% and finally those with other credentials were 24.1% of the total number of respondents. The results are a clear indication that respondents were learned and well conversant with costing techniques therefore boosting the reliability of the data.

This study sought to establish the number of years the respondents had work for manufacturing companies in the 8 counties. The finding indicated that 5.5% had worked for less than a year, 29.5% for 1 to 5 years, 51.4% had worked for 6 to10 years, and lastly above 10 years were 13.6% of the respondent. This implied that the respondents were experienced enough to give a reliable data to the questionnaire. This information is well captured in the **Table 4.2** below.

Table 4.2 Demographic Characteristics of Respondents

Demographic items		**No. of Respondents**	**% No. of Respondents**
Designation	Accountants	167	75.9
	Auditors	53	24.1
	Total	**220**	**100**

Education	Diploma level	42	19.1
	Undergraduate	108	49.1
	Masters level	17	7.7
	Others	53	24.1
	Total	**220**	**100**
Tenure	Less than a year	12	5.5
	1 to 5 years	65	29.5
	6 to 10 years	113	51.4
	Above ten years	30	13.6
	Total	**220**	**100**

Source: Research Data, (2022)

Descriptive Statistics for Financial Performance Measurements.

Response variable in this study was financial performance consisting of 10 items on 5-Likert scale. Profitability ratio (2 items), liquidity ratio (3 items), efficiency ratio (3 items) and leverage ratio (2 items) are the measurement constructs for this variable. The 10 items were tested and the findings of the study revealed that respondents' majority concurred that a good liquidity position of a company is an indication of a healthy financial status. The above items attained (M=4.62, SD=0.626 ranging between 3 to 5. Similarly, the respondents accepted that high equity ratio reduces financial performance. This is evident by highest (M=4.62, SD=0.557) it attained. Seemingly, the respondents were in agreement that item 4 (High liquidity ratio enables the company to acquire finances from lenders and creditors), items 6 (high inventory turnover escalates financial performance). These items also got a nod from the respondents by attaining (M=4.50, SD=0.705) and (M=4.54, SD=0.742) respectively. This implied that item 4 and 6 satisfactorily determine financial performance. Likewise, respondents supported the fact that liquidity ratio is utilized in determining efficiency and capability of a firm in getting and serving loan confirms that a company's financial status is stable. The items recorded similar mean (M=4.40, SD=0.643) and (M=4.40, SD=0.883) respectively. The remaining items (2,7,8,9) attained a similar response suggesting that the respondents supported the statements. These findings are clearly presented in the **Table 4.3** below.

Table 4.3: Mean & Standard Deviation for Financial Performance

Constructs/Items	**Min**	**Max**	**M**	**SD**
It is used to evaluate the efficiency of the investment of the company.	1	5	4.40	0.643
It is used to measure how effective the company uses its assets to create profit.	1	5	4.35	0.821
A good liquidity ratio indicates that the company is in good financial health.	3	5	4.62	0.626
Higher liquidity ratio enables the company to get finances from creditors and lenders.	3	5	4.50	0.705
Ability to acquire loans and service the loan shows that a company financial position is stable.	2	5	4.40	0.883
High inventory turnover increases financial performance.	2	5	4.54	0.742
Too low accounts receivable turnover decreases financial performance.	2	5	4.05	0.957
High accounts payable turnover decreases financial performance.	2	5	4.02	1.083

Ability of a company to meet its financial obligations indicate good financial performance.	2	5	4.30	0.926
High debt or equity ratio decreases financial performance	3	5	4.62	0.557
Average Value	**2**	**5**	**4.38**	**0.794**

Source: Research Data, (2022)

Descriptive Statistics for Target Costing

Target costing is the independent variable with 4 items in the 5-Likert scale. The researcher ran a descriptive statistics test on each item and the study result indicate that majority of respondents concurred that cost reduction and target production volume increases and enhances financial performance. This is evident by score of a mean of 4.24 with Standard deviation of 1.055 and mean of 4.21 with Standard deviation of 0.901 respectively. Similarly, High target price and High buying price had moderate mean of 3.97 with 1.055 and 3.02 with SD of 1.298. This indicated that the respondents moderately agreed that the two constructs would affect financial performance as illustrated in **Table 4.4**

Table 4.4: Mean and Standard Deviation for Target Costing

Constructs/Items	**Min**	**Max**	**M**	**SD**
Cost reduction increases financial performance	1	5	4.24	1.055
High target selling price increases financial performance.	1	5	3.97	0.936
High target buying price reduces financial performance.	1	5	3.06	1.298
Target production volume enhances financial performance.	1	5	4.21	0.901
Average Value	**1**	**5**	**3.87**	**1.048**

Source: Research Data (2022).

Reliability Test for Variables

In this study Cronbach alpha was use to determines internal consistency of variables. Cronbach alpha signifies multiple item scale consistency. This measure is dependent in average of mean correlation of an item versa all other items. In literature for social sciences, Cronbach value is vastly used simply because it gives a measure of reliability, which can be derived from session of investigation or administration of questionnaire (Leech, Barrett & Morgan, 2005).

Financial performance had 10 items on a 5-Likert Scale whose determinants were profitability ratio, liquidity ratio, efficiency ratio and leverage ratio with average Cronbach Alpha value of 0.702 above the standard value of 0.7 (Brett, 2016). This result suggested that internal consistency for the variable was reliable and acceptable therefore all the items were retained for further analysis.

Target costing contained 4 items on the subscale. This technique had three constructs (Target production volume, Target selling price and Target cost reduction). Similarly, 5-point Likert scale was used to get the opinion of the respondents on what extent they agreed with statements on the Likert scale. The study showed that value of Cronbach alpha was 0.841 indicating that internal consistency of this variable is acceptable and reliable hence all the items were retained for further analysis as illustrated on the **Table 4.5** below.

Table 4.5: Reliability statistics

Variables	**Number of Items**	**Cronbach Alpha value**
Financial Performance	10	0.702
Target Costing	4	0.841

Source: Research Data, (2022)

: Factor Analysis for Financial Performance

This is the dependent variable containing 10 factors. In this case only 4 factors succeeded to factor analysis. Application of Barlett of sphericity and KMO (Kaiser Mayer Olkin) measured the suitability of data set for factor analysis. The findings of the study showed KMO value of 0.594 slightly above the standard value of 0.5. Similarly, Bartlett of sphericity test yielded a chi square of 1319.94 with *df* of 45. Significant value of *P* being 0.000. This implied that factor analysis would provide satisfactory results. Large quantity of variable that provided similar information was reduced through the application of component analysis extraction method (Leech et al, 2005). In this case, factors to be taken forward for further analysis were selected through the assistance of eigenvalues. These factors attained eigenvalues as follows. (Construct 1- 35.673%, Construct 2- 19.669%, Construct 3- 15.343% and Construct 4 – 11.428%) totaling to 82.111% of the total variance.

Similarly, factor analysis assisted in measuring constructs validity. According to Simiyu, (2019), loading of factors measures validity of constructs by use of measurements cleaning process whereby items with factor loading below 0.5 is excluded from further analysis in order to boost constructs validity. Financial performance with 10 items scored factor loading of (0.885, 0.888,0.822,0.957, 0.859,0.803,0.575, 0.711,0.837,0.900). This information is shown in **table 4.6 below.**

Table 4.6: Factor Analysis Results for Financial Performance

Kaiser-Meyer-Olkin Measures of Sampling adequacy		0.594
Bartlett's Test of Sphericity Approximation	Chi Square	1319.94
	df	45
	sig	*0.000*

Component	*Initial Eigenvalues*	*Cumulative %*
Leverage Ratio	35.673	35.673
Efficiency Ratio	19.669	55.341
Liquidity Ratio	15.343	70.684
Profitability Ratio	11.428	82.111

Constructs &Measurement items	**1**	**2**	**3**	**4**
Construct 4– Profitability Ratio				
It is used to evaluate the efficiency of the investment of the company				0.885
It is used to measure how effective the company uses its assets to create profit.				0.888
Construct 3 – Liquidity Ratio.				

A good liquidity ratio enables the company is in good financial health.			0.822	
Higher liquidity ratio enables the company to get finances from creditors and lenders.			0.957	
Ability to acquire loans and service the loan shows that a company financial position is stable	0.759			
Construct 2 – Efficiency Ratio				
High inventory turnover increases financial performance		0.859		
Too low accounts receivable turnover decreases financial performance.		0.803		
High accounts payable turnover decreases financial performance.	0.575	0.711		
Construct 1 – Leverage Ratio				
Ability of a company to meet its financial obligations indicate good financial performance.	0.837			
A high debt or equity ratio decreases financial performance.	0.900			

Source: Research Data (2022)

Factor Analysis for Target Costing

Target costing is the independent variable consisting of 4 items which were all retained for factor analysis. Research data suitability was measured by use of Kaiser Mayer Olkin (KMO) and Bartlett of sphericity. The two tools attained a value of 0.725 above the expected value of 0.5 and chi square of 1095.25 with *df* of 105 respectively. P value was 0.008. Eigen values were used in selection of factors to be brought forward for further analysis. Target costing a single component scored an eigenvalue of 19.436% while Factor loading for this variable were (0.861,0.833, 0.791, 0.798) as illustrated in **table 4.7.** These values were above standard value of 0.5, therefore they were all retained for further analysis.

Table 4.7: Target Costing Factor Analysis Results

Kaiser-Meyer-Olkin Measures of Sampling adequacy			0.725
Bartlett's Test of Sphericity Approximation	Chi Square		1095.25
	df		105
	sig		0.008
	Initial Eigenvalue %	Cumulative %	
Target costing	19.436	19.436%	

Variables & Measurement Item (Note 1 -4, Component 1 to 4)	**1**	**2**	**3**	**4**
Construct – Target Costing				
Cost reduction increases financial performance.	0.861			
High target buying price reduces financial performance.	0.833			
High target price reduces financial performance.	0.791			
Target production volume enhances financial performance.	0.798			

Source: Research Data (2022).

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Correlation Analysis

Pearson's coefficient was applied to examine the linear relationship between the independent and dependent variables in the population. Correlation result showed that target costing and financial performance had a positive correlation of r = 0.607**. This information is clearly shown on the **Table 4.8** below.

Table 4.8: Pearson's Coefficient Results

Variables (N = 220)	**1**	**2**
Financial Performance	1	
Target Costing	0.607**	1

**Correlation is significant at the 0.01 level (2-tailed).

Testing of Hypothesis

Hypothesis testing refers to the procedure of determining power of evidence from a sample distribution and providing the model for making judgements in relation to the population (Davis & Mukamal, 2006). The study utilized regression analysis to test the null hypothesis. Regression analysis is defined as a statistical tool used to estimate how variables are related. It analyses the relationship of one independent variable and a dependent variable. The result is a linear relation between the two variables (Uyanik & Guler, 2013).

Scientific research articulate that null hypothesis is usually tested and either confirmed or rejected (Marczyk, Dematteo & Festinger, 2005). P-value was employed to establish any relationship between independent and dependent variables. The result of the study revealed that target costing had (β=0.146, P=0.008). These values meet the anticipated significant level therefore implying that the null hypothesis should be rejected. This information is clearly illustrated on **table4.9** below.

Table 4.9: Hypothesis Testing Result Summary

H_{0n}	Null Hypothesis	β	P-Value	Decision
H_{01}	Target Costing has no significant effect on financial performance of manufacturing industries in North Rift Economic Block.	0.146	0.008	Rejected

Source: Research Data (2022)

Target Costing Effect on financial performance

Hypothesis H_0 suggests that target costing has no significant impact on financial performance. The result on **table 4.9** indicate that target costing has a positive statistical significant effect on financial performance. It attained β coefficient value of 0.146 and P-value of 0.008 lower than 0.05 significant level, consequently resulting to null hypothesis rejection.

DISCUSSION

The main objective of the study was to examine the effect of target costing on financial performance of manufacturing industries in North Rift Economic Block (NOREB). The study disclosed that target costing

(β = 0.146, P>0.008) has a positive and significant effect on financial performance. This result agrees with the findings of Abura & Litunya, (2022) which showed that there is significant relationship between target costing and financial performance. Similarly, the result also concurred with the findings of Slater, (2010) which revealed that target costing boosted cost competitiveness and avoided the introduction of unprofitable products. This implied that this technique improved profitability. On the contrary, a study done by Narsaiah, (2020), Pearson's correlation result revealed that the relationship between target costing and profitability was negative. Likewise, a study was done by Oluwayemisi, Elkanah, Ademola, Mathew & Mamidu, (2022) on cost control versa financial performance from selected manufacturing firm in Nigeria. The study found out that cost control possesses both positive and negative effect on financial performance specifically if measured in reference to profit after tax. The findings of the study pointed out that a good liquidity ratio is an indicator of good financial health of a company. Similarly, the study results confirmed that high inventory turnover increases financial performance of the company.

Pearson's correlation results in this study confirmed that there is a strong correlation between target costing and financial performance. This implied that one unit change in independent variable would cause one unit change on dependent variable. The study results further indicated that profitability ratio is used to determine efficiency of company's investment. Likewise, this measurement also evaluated the effectiveness of the company in utilizing available resources to enhance profitability. Descriptive result also indicated that high accounts payable turnover, high debt or equity ratio and too low account receivable turnover decreases financial performance.

CONCLUSION

Generally, the key findings of the study point out that target costing influences financial performance positively by enhancing competitiveness on cost. Seemingly, it boosts profitability through cost reduction and target price determination in line with desired profit. The study further indicated that target production volume and cost reduction escalates financial performance. Seemingly, it was noted that heightened target price and buying price would influence financial performance positively and negatively respectively. This is an indication that target costing will dictate to large extent profitability and finally financial performance of manufacturing industry.

RECOMMENDATIONS

https://strategicjournals.com/index.php/journal/article/view/2387 Existing literature confirms that global companies opted for target costing technique to fix high cost of production. This study recommends the application of target costing by manufacturing companies to help them navigate through current economic constraints. This process will assist in cost management, realization of target production volume, setting up of target price and finally actualization of target profit. In return, such practices will boost financial performance if employed consistently by manufacturing companies.

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