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Product Diversification and the Financial Performance of Manufacturing Companies in Kenya

Ndung'u Stephen Kanini[1], DR. Kibati Patrick[2], DR. Stella Muhanji[3]
1 (Kabarak University, Kenya)
2 (Kabarak University, Kenya)
3 (Kabarak University, Kenya)

Abstract:*This study sought to establish the impact product diversification strategies as used by manufacturing entities in Kenya on the financial performance of these entities focusing on the earnings before interest and tax (EBIT) and return on assets (ROA). Limited research has been carried out on how manufacturing entities in Kenya manage operational risks despite these entities facing high volatility in the operating environment. The objectives of the study therefore focus on how product diversification as a risk management strategy influences the financial performance of manufacturing entities in Kenya. The research was based on the modern portfolio theory as by carefully choosing of investments to be included in a portfolio; an investor can effectively minimize the risk exposure and in the process maximize the portfolio expected return. The study used ten year panel data for the period spanning 2007 – 2016 from a sample of forty nine companies. From the findings, the null hypotheses of the study werenot rejected implying that product diversification does not have a significant influence on the financial performance of manufacturing entities in Kenya when measured against both EBITS and ROA.*
Key Words:*Product diversification, financial performance, manufacturing entities*

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I. Introduction

The relationship between product diversification and the financial performance of an entity forms an exciting area of study and significant research exists on this area of study. Ibraimi (2014) argues that strategy should be a conscious effort to enhance the business entity competitive advantage which should start with recognition of your capacities, competitors, customers and how these variables will eventually affect the financial performance of the entity. He concludes that financial performance will be linked to the causal variables resulting from business environment, entity strategies and organizational characteristics. Diversification as one of the strategies a business entity can pursue has been observed to be effective in the reduction of business risk, generation of sustainable growth and the establishment of solid market share for manufacturing firms in Brazil (Mendonça & Las Casas, 2013). Ficici, Wang, Aybar and Fan (2014) found that a delicate balance should be maintained between the benefits of international expansion against its detrimentsas in the early stages of internationalization, higher costs incurred will eat into the entity profits. It's only in the mature stage that the business entities are able to achieve better performance due to economies of scale, learning curve and geographic diversification. Oyedipo (2012) found that revenue growth and financial performance are influenced by the mode of diversification adopted whereby it was observed that business entities pursuing related product-market diversification strategy attained faster growth which was sustainable in the long run and superior financial performance was equally observed.

This article focuses on the aggregate diversification in the manufacturing firms in Kenya as majority of the firms are still in their early and middle growth stages with few mature industries and thus fragmenting them into individual sectors may not give adequate and comprehensive picture of the level of diversification.

This work is organized as follows: in the second section, the hypotheses and theoretical grounding are presented. In section three, empirical literature review is outlined. Section four presents the research methodology and the variables of study. Section five presents the results and the discussion of the findings.

II. Hypotheses

Financial performance literature points to the fact that financial performance of manufacturing entities should at least be influenced by the product diversification adopted by a given entity. Bouras, Bouras and Ajuzie, (2014) established that diversification is a viable strategy that a business entity intending to enhance its financial performance can use. Through diversification, a business entity is able to

reduce costs through economies of scope especially when it diversifies in to non-related products. Through review of related literature, we came up with the following hypotheses;

Hypothesis 1: Product diversification has a significant positive relation with the earnings before interest and tax scaled by sales (EBITS) of manufacturing companies in Kenya.

Hypothesis 2: Product diversification has a significant positive relation with the return on assets (ROA) of manufacturing companies in Kenya.

Capkun, Hameri and Weiss (2009) contend that EBITS is a superior measure of financial performance as it indicates how well a business entity is able to efficiently control cost of sales, production and operating expenses. To measure financial performance, the study used earnings before interest and tax scaled by sales as a proxy of financial performance. ROA is equally an appropriate measure of financial performance especially for young and growing companies and thus has been incorporated as one of the measures of financial performance.

III. Theoretical Framework

Harry Markowitz 1952 formulated the Modern Portfolio Theory (MPT) in a paper on portfolio selection and since then, the theory has found wide applicability in finance areas. MPT advances that through carefully choosing of investments to be included in a portfolio; an investor can effectively minimize the risk exposure and in the process maximize the portfolio expected return. According to Markowitz, the risk of a portfolio should be the covariance of the portfolio and any investor should aim at creating a portfolio of low covariance investments. Different researchers have studied the relationship between product diversification and financial performance (Burger, Padgett, Bourdean, & Sun 2009; Shen, Wang, & Su, 2011; Olajide, 2012) and their theoretical grounding and reference has been the Modern Portfolio Theory.

Sharpe in 1963 extended the concept in the MPT and formulated the factor model which is used to determine how a security performs in relation to the general market index. Ross in 1976 formulated asset pricing model which has found wide application in assets pricing when factoring multiple risks (Fabozzi, 2002). Scholars such as Chen and Yu (2011); Olajide (2012) argue that product diversification exploit's economies of scope and will only succeed when the marginal benefits of diversification are higher than the marginal costs and some of the benefits that may accrue from diversification include stability in income flows, enhancement of profits, growth in revenue and better performance of the entity shares in the market. MPT therefore provides very solid grounding when researching on the impact of product diversification on the financial performance of manufacturing companies in Kenya.

IV. Literature Review

Purkayastha (2013) argues business entities operating in emerging markets tend to benefit more from diversification as it helps to overcome market imperfection resulting in superior financial performance. Benefits of diversification tend to vary depending on the stage at which an entity is at. Ficici et al. (2014) argue that at the initial stage when an entity is diversifying into foreign markets, the costs incurred tend to outweigh the benefits accrued from diversification leading to poor financial performance. As the entity settles in the market and expands, it's able to enjoy economies of scale and scope, risk diversification and exploration of available opportunities. However if an entity over diversifies this will have a negative effect on the profitability of the entity due to cost outweighing the benefits of diversification.

Ravichandran and Bhaduri (2015) takes a different view of corporate diversification and presents three categories of diversification namely concentric diversification where a business entity diversifies into an industry which is technologically similar to the line of operation it's currently undertaking, horizontal diversification where the entity manufactures new products which still have appeal to its current customers and conglomerate diversification through mergers and acquisition where the entity enters into an entirely new market and industry with the intention of attracting new customers hence improving financial performance.

Yigit and Tur (2012) enumerates five key benefits that may result from unrelated diversification namely, risk reduction in situations of environmental uncertainty and for rejuvenating products in the decline stage of the life cycle of the product. Unrelated diversification will be appropriate in such a situation as it reduces the risk exposure resulting from the current undertakings. Reduction in transaction costs will result from unrelated diversification as the transaction costs on internal capital control are less when undertaking unrelated diversification. Decrease in cost when providing services such as public relations, security, audit and investment decisions to strategic business units will be realized. Superior business management skills will be available from a range of managers in charge of different units leading to higher profitability. Finally, unrelated diversification helps managers develop economic value for different product lines and markets with the end result being better financial performance.

Boz, Yigit and Anil (2013) using Rumelt classification postulate that diversification has a positive impact on organizational performance due to economies of scale and scope, market power, reduction of risks and learning curve effects. The researchers posits that related diversification result to higher profits compared to unrelated diversification as a business entity is able to exploit synergies that result from existing relationships to achieve costs or differentiation advantages. However diversification has its related risks such as bureaucratic costs that result from running large business entities, agency conflicts when managers serve their interests and when business entities undertake misinformed business decisions.

Yigit and Tur (2012) using the Herfindahl index advance that organizational performance tends to initially increase up to the attainment average diversification but declines after as the costs outweigh the benefits. Kahloul and Hallara (2010) applied Entropy and Herfindahl indices to evaluate the impact of diversification on firm performance with the argument that it's important to use a series of measures to ensure coherence of analysis. They came to the conclusion that when performance is constrained, companies tend to refocus their strategy and diversify less.

Nwakoby and Hediwa (2018) evaluate the significance of business and product diversification on the financial performance. The researchers found significant positive correlation between product diversification and the financial performance of the firm. However, there was no statistically significant relationship between business diversification and the financial performance. Ojo (2012) argues that high correlation exists between corporate diversification and the financial performance of companies in Nigeria with the key objectives of diversification being to enhance their financial performance, increase the companies' synergy, gain more market power and the agency motive.

Manyuru, Wachira and Amata, (2017) evaluated the impact of diversification of companies listed in the Nairobi securities exchange and established that diversification has a varying effect on the entities. Their study centered around whether geographical and industrial diversification has an impact on the performance of the listed companies and they came to the conclusion that geographical diversification did not have a significant effect on the financial performance. However the research showed that there was a significant effect of the industrial diversification on the financial performance of business entities especially in the agricultural firms which may be attributable to the fact that Kenya is an agricultural country and such performance will be influenced by volatility in commodity prices.

Ghorbani (2013) asserts that diversification increases profitability through increased sales resulting from new markets and products. As MPT advances diversification is crucial as through carefully choosing of investments to be included in a portfolio; an investor can effectively minimize the risk exposure and in the process maximize the portfolio expected return. Even though a lot of research has been carried out on the relationship between product diversification and financial performance, the results from these studies have been inconclusive with the relationship being said to be positive, negative, non-significant or being inverted U-shaped (Asrarhaghighi, Rahman, Sambasivan, & Mohamed, 2013).

V. Methodology

Herfindahl–Hirschman diversification index is deemed to be suitable as it is possible to simultaneously analyze data from several products/segments and determine the relative contribution of each segment/product to the total sales/revenue Kahloul and Hallara (2010). Herfindahl–Hirschmandiversification index was therefore used to measure diversification in manufacturing companies as it is possible to accurately collect the data needed.

$$HHI = \sum_{i=1}^{n} P_i^2 \quad \ldots\ldots 1$$

Where *n* is the quantity of the business entity's activities and P_i is the comparative weight of each activity evaluated as the proportion of the sale x_i of the activity i of a business entity. Thus the calculation used was as follows;

$$HHI_{i,t} = \sum(ssales_{i,t}/sales_{i,t})^2 \quad \ldots\ldots 2$$

Where $SSales_{i,t}$ represents sales a certain portion of the company sales (product/segment sales) of firm *i* at time *t* while $Sales_{i,t}$ are equal to the total sales of firm *i* at time *t*. Herfindahl–Hirschmandiversification index variable for one portion of a business entity equal to 1. For entities that are diversified one part is less than 1 with the smaller coefficient indicating a greater extent of corporate diversification.

A regression model is therefore derived equivalent to the one for Kahloul and Hallara (2010) to test the relationship between diversification strategies of financial performance as below;

Long run model;

$$EBITS_{i,t} = \beta_0 + \beta_1 \ln(assets_{i,t}) + \beta_2 DIV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 SGR_{i,t} + \alpha_i + \acute{\varepsilon}_{i,t} \quad \ldots\ldots 3$$

Dynamic model;

$EBITS_{i,t} = \beta_0 + \lambda EBITS_{i,t-1} + \beta_1 \ln(assets_{i,t}) + \beta_2 DIV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 SGR_{i,t} + \alpha_i + \acute{\varepsilon}_{i,t}$ ……4

i 1,…….,49 (individual manufacturing companies)
t 1,2……10 (time indicator)

Where $EBITS_{i,t}$is performance of entity *i* at time *t*, $EBITS_{i,t-1}$ performance of entity *i* at time *t-1*, $DIV_{i,t}$ is corporate diversification level of firm *i* at time *t* measured by Herfindahl–Hirschmandiversification index, $\ln(assets_{i,t})$, the natural log of total assets is included as a control variable to factor in the size of the company. $LEV_{i,t}$ depicts financial leverage and capital structure, measured by ratio of total debt to total assets which has a significant influence on firm performance. $SGR_{i,t}$ is measured as the average variation of turnover over the study period computed as $sales_n$ less $sales_{n-1}$ divided by $sales_{n-1}$.

Similar measures were used under the ROA model as below;

Long run model;

$ROA_{i,t} = \beta_0 + \beta_1 \ln(assets_{i,t}) + \beta_2 DIV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 SGR_{i,t} + \alpha_i + \acute{\varepsilon}_{i,t}$ …….5

Dynamic model;

$ROA_{i,t} = \beta_0 + \lambda ROA_{i,t-1} + \beta_1 \ln(assets_{i,t}) + \beta_2 DIV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 SGR_{i,t} + \alpha_i + \acute{\varepsilon}_{i,t}$ …….6

i 1,…….,49 (individual manufacturing companies)
t 1,2……10 (time indicator)

Where is $ROA_{i,t}$ performance of entity *i* at time *t*, $ROA_{i,t-1}$ performance of entity *i* at time *t-1*.

Measures

Explanatory Variable

We have used Herfindahl–Hirschman diversification index to measure product diversification. Researchers such as Raei, Tehrani and Farhangzadeh (2015) and Kahloul and Hallara (2010) recommend the use of Herfindahl–Hirschman diversification index as it does not require the use of Standardized Industrial Classification (SIC) codes and it's suitable for analyzing data from emerging markets.

Dependent Variables

Two dependent variables are used in the study; namely earnings before interest and tax scaled by sales (EBITS) and ROA. These two measures are appropriate when used side by side as they are able to give a complete picture on the various aspects of financial performance. EBITS is used as a measure of financial performance because it is a more forthright measureof financial performance (Capkun, 2009). ROA is equally an important measure of financial performance because it indicates the efficiency with which a business entity is able to use assets to generate returns (Yigit & Tur, 2012).

Sales Growth

Fazli, Sam and Hoshino (2014) found that sales growth influenced the performance Japanese ICT industries over other Asian countries. The researchers argue that sales growth will give impetus to a business entity to enhance its financial performance by coming up with new lines of operations or products even as such companies maintain old profitable products.

Leverage

Kamran, Rose and Ullah, (2016) evaluated the impact of financial leverage on the financial performance focusing on measures such as return on assets and return on equity. The researchers concluded that there is a significant but negative relationship between debt measured using the debt ratio and the financial performance of an entity. This relationship is inverse whereby as the level of debt increases, the financial performance declines.

VI. Results

Descriptive Statistics

Table 1 shows the overall mean, standard deviation, minimum and maximum values of EBITS, ROA, Lnassets, sales growth ratio, corporate diversification and leverage respectively.

Table 1: Summary Statistics for the Secondary Data Set

Variable	Obs	Mean	Std. Dev.	Min	Max
EBITS	351	0.0045	0.6391	-7.2000	0.9114
ROA	351	0.0881	0.1418	-0.4799	0.6351
Lnassets	351	7.8721	1.9968	1.6094	12.603
Div	351	0.7356	0.2522	0.0000	1.0000
Leverage	351	0.5525	0.4671	0.0081	4.0911
SGR	351	0.0735	0.3415	-0.5770	3.4520

Product diversification was measured using Herfindahl–Hirschman diversification index (HHI). Three control variables namely, Lnassets, leverage and sales growth ratio were also included. From Table 1 the average EBITS was 0.0044579 with standard deviation of 0.6390666. The maximum and minimum values were -7.2 and 0.911401 respectively. This implies that across the manufacturing companies the earnings before interest and tax scaled by sales have been registering significant fluctuations and this can be explained by almost similar operating environment prevalent within the country and can be correlated with similar observations in the listed companies which have been issuing profit warnings signifying expectations of significant declines in profits.. Return on assets as an alternative measure of performance shows a trend equivalent to that of EBITS although at a lesser scale implying that irrespective of the performance measure, the manufacturing companies' performance followed the same trend in the period under review. Average natural logarithm of assets was 7.872096 with standard deviation of 1.996836, minimum of 1.609438 and maximum 12.60331. This depicts high variability that can be explained by the fact that the manufacturing companies are of different sizes ranging from small firms to multi nationals and thus the significant variation in this measure and justifies inclusion of the natural log of assets as a control variable.

Corporate diversification has a mean of 0.7356 with a standard deviation of 0.2522 with a minimum of 0 and a maximum of 1 signifying that manufacturing entities range from those with a single product to those with a range of products or segments. The results show low product diversification across manufacturing companies. Sales growth ratio ranges from positive to negative values with near normal distribution across all measures. A similar trend is observed in leverage which is low for some companies and others are highly leveraged. The distribution across these measures points to almost normal distribution of data.

Table 2 Correlation for Product Diversification and financial performance

	EBITS	ROA	Lnassets	DIV	Lev	SGR
EBITS	1.000					
ROA	0.5889 (0.000)	1.000				
Lnassets	0.1101 (0.0392)	0.1828 (0.0006)	1.000			
DIV	-0.2576 (0.000)	-0.3900 (0.000)	-0.4546 (0.000)	1.000		
Leverage	-0.0269 (0.616)	-0.1822 (0.0006)	-0.1198 (0.0248)	0.1214 (0.0229)	1.000	
SGR	0.0971 (0.0692)	0.1245 (0.0196)	0.0454 (0.3963)	0.0029 (0.9572)	0.0060 (0.9108)	1.000

Key: P-values in parenthesis

Table 3 Estimated Coefficients of Product Diversification and Financial Performance

Dependent variable	**EBITS**	**ROA**
Explanatory variable	**Coefficient.**	**Coefficient.**
Lnassets	0.0041095	-0.0573431***
	(0.11)	(-3.71)
Diversification	-0.0248172	-0.0779522
	(-0.15)	(-1.59)
Leverage	-0.0459561	-0.0841888**
	(-0.40)	(-2.05)
Sales growth ratio	0.2017884***	0.0576278***
	(3.88)	(3.99)
_cons	-0.0526139	0.6388758***
	(-0.15)	(4.77)
Post Estimation Diagnostics		
Hausman Test	6.35	19.29
	(0.1747)	(0.0007)
Wald test chi2(3)	15.31	-
	(0.0041)	
F test	-	8.55
		(0.000)
Lm test Chibar2	229.30	-
	(0.000)	

KEY
Standard errors in parentheses
P-Value<0.01 ***
P-Value<0.05 **
P-Value<0.1 *

Table 4 One Step System GMM Estimates for Product Diversification

Dependent variable	**EBITS**	**ROA**
Explanatory variable	**Coefficient.**	**Coefficient.**
$EBITS_{t-1}$	-0.270869	-
	(-0.39)	
ROA_{t-1}	-	0.322215***
		(2.96)
Lnassets	0.0278218	-0.0608484**
	(0.29)	(-2.53)
Diversification	0.2214926	-0.0614568
	(0.85)	(-0.94)
Leverage	0.0001204	-0.193341***
	(0.00)	(-3.46)
Sales growth ratio	0.216638***	0.0594064***
	(3.60)	(3.95)
_cons	-0.3902325	0.6877923***
	(-0.46)	(3.25)
Post Estimation Diagnostics		
Hansen J test	30.13312	28.6772
	(0.6930)	(0.7934)
Wald test	16.57	43.44
	(0.0054)	(0.000)

KEY
Standard errors in parentheses
P-Value<0.01 ***
P-Value<0.05 **
P-Value<0.1 *

Findings

The study used correlation analysis to check for multicollinearity and the relationship between the various variables as illustrated in Table 2. No multicollinearity can be observed under the different variables. We observe a low but positive and significant relationship between the entity size and the financial performance when measured under both EBITS and ROA model. Product diversification has a negative and significant with the financial performance under both EBITS and ROA which is contrary to both hypotheses 1 and 2. A similar negative relationship is observed under leverage. However even though the relationship between leverage and EBITS is negative, it is not significant. Sales growth ratio has a positive and significant relationship with the financial performance of manufacturing entities implying that the higher the growth in sales, the better the financial performance.

The fixed and random effect models were estimated to establish the appropriate model. The Hausman test results showed that random effect model was appropriate for EBITS while the fixed effect model was adopted to evaluate the relationship between ROA and product diversification as depicted in Table 3. We observe a negative but insignificant relationship between product diversification and the financial performance of manufacturing entities both under EBITS and ROA. To enhance the robustness of the model and check the impact of the time effect, one step GMM estimates were generated under Table 4. We used one year lagged values for the EBITS and ROA models. The relationship between financial performance and product diversification is still insignificant under the EBITS and ROA models when you factor the time effects.

VII. Summary and Discussion

The random effects results under EBITS model in Table 3 indicate that product diversification has a negative but insignificant effect on the financial performance. This is contrary to Nwakoby and Hediwa (2018) who advance that the performance of manufacturing companies is significantly affected by product diversification. The insignificant effect of product diversification on the financial performance can be attributed to the fact that for most of the companies under study, it was observed that the bulk of the income was generated by one or two products while other products in the range had limited contribution to the income generated. As Yigit and Tur (2012) argue, organizational performance tends to increase up to the average diversification but declines after as the costs outweigh the benefits. Thus unless the contribution of a product in terms of revenue is significant, the benefits of diversification may not be noticeable. The GMM results under Table 4 present a similar picture as we found that even when the time effect is factored, product diversification does not have a significant effect on the financial performance of manufacturing companies in Kenya. We therefore do not reject the first hypothesis that Product diversification does not have a significant positive relation with the EBITS of manufacturing companies in Kenya.

Under the ROA model in Table 3 we equally observe that product diversification has no significant relationship with the financial performance. The GMM results allude to similar insignificant relationship between product diversification and the financial performance. This is contrary to the observation by Manyuru, Wachira and Amata, (2017) who concluded that industrial diversification reduces the entity value and its performance. As Purkayastha (2013) posits, the effect of diversification on financial performance can be attributed to the capital structure and the type of assets held by an entity. Entities which hold nonproductive assets eventually register low return on assets. We therefore do not reject the hypothesis that product diversification does not have a significant positive relation with the return on assets (ROA) of manufacturing companies in Kenya.

Recommendations

This study disparages the oft held position that product diversification will lead to better financial performance of business entities. The analysis has shown that diversifying may not necessarily result to better financial performance and therefore manufacturing entities should approach the issue of diversification with caution. The researchers observed that leverage has a negative effect on the financial performance of manufacturing entities and hence it can be concluded that manufacturing entities should maintain optimal capital structure with a healthy mix of equity and debt to meet the financing needs but equally avoid the negative effect of debt financing. Sales growth ratio has a significant and positive effect on the financial performance of manufacturing entities and therefore entities should grow their sales through diversifying their operations.

References

[1]. Burgers, W., Padgett, D., Bourdeau, B., & Sun, A. (2009). Revisiting the link between product and industry: diversification and corporate performance. *International Review of Business Research Papers, 5*(1), 367-379.

[2]. Chen, C. J. & Yu, C. M. J. (2011). Managerial Ownership, Diversification, and Firm Performance: Evidence from an Emerging Market. *International Business Review, 21*(3), 518-534.

[3]. Fabozzi, F., Gupta F., & Markowitz, H. (2002). The legacy of modern portfolio theory. *The Journal of Investing,* 7-22.

[4]. Ficici, A., Wang, L., Aybar, C., & Fan, B. (2014). The correlation between the internationalization processes and performance of firms: The case of emerging market firms of the BRIC countries. *Journal of Economics and Political Economy,1*(1), 4-25.

[5]. Ibraimi, S. (2014). Performance determinants of manufacturing firms: analysis from a strategic management perspective. *International Journal of Academic Research in Economics and Management Sciences*, *3*(2), 92-112.

[6]. Kahloul, I., & Hallara, S. (2010). The impact of diversification on firm performance and risk: empirical evidence. *International Research Journal of Finance and Economics,35*, 150-162.

[7]. Manyuru, A. Wachira, M & Amata, E. (2017). The impact of corporate diversification on firm value in Kenya, *African Journal of Business Management, 11*(11), 241-249.

[8]. Mendonça, P., & Las Casas, A. (2013). Diversification as a sustainable growth strategy in the packaging market: Case study of a Brazilian company. *Journal on Innovation and Sustainability*, *4*(2), 61 – 81.
[9]. Nwakoby, N. & Hediwa, A. (2018).Effect of Diversification on the Financial Performance of Selected Firms in Nigeria. *International Journal of Advanced Academic Research, 4*(12), 1 – 16.
[10]. Ojo, O. (2012). Corporate Diversification and Firm Performance: an Empirical Study. *Manager*, (9), 39-52.
[11]. Olajide, P. (2012). Product diversification and performance of manufacturing firms in Nigeria. *European Journal of Business and Management*, *4*(7), 226-234.
[12]. Purkayastha, S. (2013). Diversification Strategy and Firm Performance: Evidence from Indian Manufacturing Firms. *Global Business Review14*(1), 1–23.
[13]. Ravichandran, A., & Bhaduri, S. (2015). *Diversification and firm performance: A study of Indian manufacturing firms*. (Munich Personal RePEc Archive) MPRA Paper No. 68013.
[14]. Shen, H., Wang, D., & Su. Z. (2011). Diversification and firm performance in China. *African Journal of Business*, *5*(27), 10999-11004.
[15]. Yigit, I., & Tur, S. (2012). Relationship between diversification strategy applications and organizational performance according to Herfindahl Index criteria. *Procedia - Social and Behavioral Sciences 58*, 118 – 127.

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