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THE EFFECT OF NEW PRODUCT DEVELOPMENT ON ORGANIZATIONAL PERFORMANCE: THE CASE OF BISCUIT MANUFACTURING COMPANIES IN ADDIS ABABA, ETHIOPIA

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Abstract

New product development has become a potentially valuable way of securing a competitive advantage by improving organizational performances. Fundamentally, a firm fulfills this purpose through its products. The main purpose of this research is to assess the effect of new product development on organizational performance in the case of biscuit manufacturing companies found in Addis Ababa. A Quantitative research approach, descriptive research design, and cross-sectional field survey were used for this study. The probability sampling technique specifically the stratified random sampling method was applied in order to select sample respondents from the total population of 268. Primary data was collected using a structured questionnaire. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation and multiple linear regression) with the help of SPSS Version 20.0. The result indicated that three of the independent variables such as product quality, product size, and product design have a moderate and positive relationship and; significantly affect organizational performance. Whereas, a product line which is the fourth independent variable has a weak relationship and insignificant effect on the performance of target organizations. Based on the findings, the researcher recommends biscuit manufacturing firms improve the quality of their product, and respond to the dynamic changes in customers' needs in product size and product design through the introduction of new products to improve the performance of their organization.

Keywords: New product development, Product quality, Product size, Product line, Product design, Organizational performance

Introduction and Justification

The dynamic technological advancements, the continuous change in consumers' demand, globalization, and the highly competitive business environment are leading organizations and industries to focus on innovating and developing new products continuously. New Product Development (NPD) is the complete process of bringing a new product to the market that involves systematic methods of designing, creating, and launching. The term new product development is all-embracing and ranges from products that are totally new to the world to minor modifications (Barclay et al., 2000; Wang, et al., 2022). Kotler and Keller (2009) noted that NPD is the development of original products, product improvements, product modifications and new brands through the firm's own product development efforts. Booz, Allen and Hamilton (1982) also identified new product in six categories as new to the world, new product lines, additional to the existing lines, improvement and revision of existing products, re-positioning, and cost reductions.

Product development can be described as the lifeblood of any business organization (Fakhreddin & Foroud, 2022; Chux, 2010; Berényi & Soltész, 2022). It was first developed as one of the four Ansoff Matrix, product-market strategies of company growth, which involves extensive research and development and; expansion of the product range (Loch & Kavadias, 2008; Araujo, et al., 2022). According to Kuwashima (2012), empirical works on NPD began in earnest in the 1960s with the "grand approach" focusing on clarifying the general success factors through the comprehensive analysis of successful project profiles. In the 1970s, the "focus approach" came where the analysis focused on specific themes in product development. In latter half of the

1980s, the focus shifts to the "process approach" where the relationship between management of the product development process and performance was analyzed in detail.

NPD is a means for a company to gain an advantage, secure a position or win a new customer. The more successful and timelier an organization can develop new products, the more likely it is that organization will not only survive but also prosper (Louch & Kavadias, 2007; Iheanachor, Ovemeso, & Olayinka, 2021). A large number of empirical works conducted so far globally illustrates that the success of most organizations is linked with the development of successful products which in turn depends on identifying the needs and interests of the customers and quickly satisfying those demands.

Organizational Performance (OP) is a measure of the degree to which a company has attained its set goals and objectives. Tomal and Jones (2015) defined OP as an actual output of an organization in relation to the intended one. For an organization to compete effectively in the dynamic and competitive business environment, to achieve set goals, to satisfy the constantly changing desires, needs of customers, incomes, lifestyle, level of education, sophistication, and technology; the marketing policies have been dynamic and the product offerings to the market are constantly under review and frequent changes as the product are the cornerstone of the firm's marketing mix: every other element rests on it (Nwokah *et al*., 2009; Haile & Tüzüner, 2022).

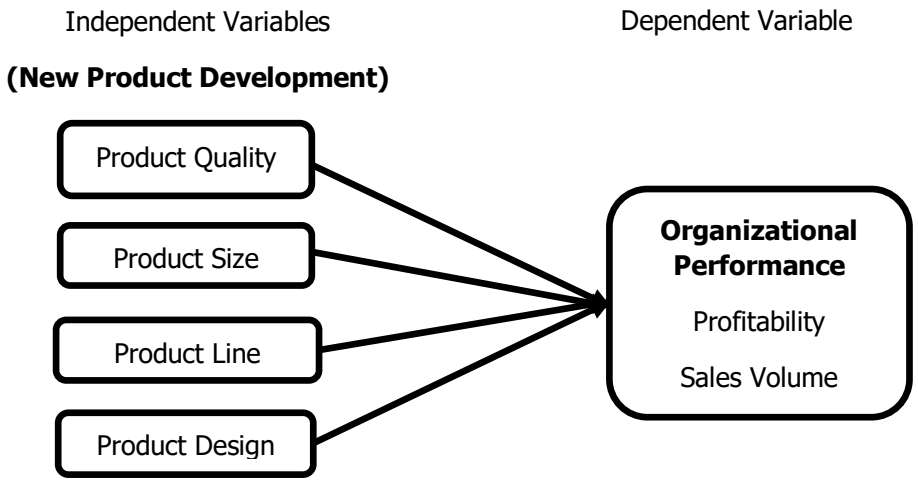
Empirical pieces of evidences on the relationship between product development and the performance of companies show successful firm performance through the development of new products (Haeussler *et al.,* 2012; Nwokah *et al.,* 2014; Udegbe *et al*, 2013; and Benson *et al*., 2015), increase in market share through NPD (Chux, 2010), success on financial performance (Heather, 1990; Kariuki, 2018 & Sagatoych, 2013), firm growth through NPD (Goedhuys & Veugelers, 2008), customer satisfaction also attained through developing new products (Awwad & Akroush, 2016; Selam, 2019; Etsegenet, 2018).

A preliminary observation of the Ethiopian Biscuit Manufacturing Industry shows phenomenal growth, both in size and number, and the performance of some Biscuit Manufacturers has made that possible through effective product development. However, unless clearly substantiated and ascertained by a concerted empirical effort these will be just a belief, hunches, and conjectures. So far, the situation in the country's biscuit manufacturing industry appears not to have stimulated interest among researchers and academics. As a result, there arevvery few studies conducted on the subject of NPD in Ethiopia. Those scanty research by Etsegent (2018), Selam (2019), Ermias (2019), and Mesfin (2019) aimed at identifying the NPD dimensions (success factor) and their impact on customer satisfaction. None of those studies aimed at examining the effect of NPD on OP. Hence, this research is aimed at bridging the existing wider empirical literature gap by taking Biscuit Manufacturing Companies in Addis Ababa.

Conceptual Framework

The conceptual model presents the relationship based on the reviewed literature and basic research questions. Thus, the model below presented the relationship between NPD indicators (independent variables such as product quality, product size, product line and product design) and OP (dependent variable) measures such as profitability and sales volume.

Figure 1: Conceptual Framework



Source: Researcher's Own Construct (2022)

Research Methods

In order to examine the problem, a quantitative research approach was utilized by using close-ended questionnaires with a five-point Likert scale. Besides, descriptive and explanatory research designs were employed. Descriptive design was employed since it helps to gather information about the present or existing condition (Creswell, 1994), while the explanatory design was primarily intended to establish the relationship between dependent and independent variables.

The total population of this study encompasses the top management, middle-level management, lower-level management, sales, and marketing team of biscuit manufacturing companies based in Addis Ababa (i.e. Horra Food Complex, Kality Foods Share Company, KOJJ Food Complex, and NAS Foods PLC). The population size was 268 staff from the management, sales, and marketing team. It is very important to choose a sample that is truly representative of the population so that the conclusion derived from the sample can be generalized back to the population of interest. Hence, this study used a probability sampling technique particularly stratified random sampling. In stratified random sampling, a sample is obtained by separating the heterogeneous populations into homogenous groups called strata and then selecting a sample from each stratum based on their proportion. A stratified random sampling allows us to take into account the different subgroups of people in the population and helps guarantee that the sample accurately represents the population on specific characteristics.

Even though there are several approaches to determining the sample size, this study utilized Yamane's (1967) simplified formula to calculate and determine the sample size based on a 95% desired confidence level and a 5% desired level of precision.

$$n = \frac{\mathcal{N}}{1 + \mathcal{N}(e^2)}$$

Where; n = sample size
$\mathcal{N}$ = total population
e = level of precision
Therefore,

$$n = \frac{268}{1 + 268\left(0.05^2\right)}$$

n = 160.5 ≈ 161

From the total 268 study population of different department 161 representative samples were selected which represents 60.1% of the total population. Samples from each stratum were calculated using the equation below developed by William.

$$nh = \left(\frac{\mathcal{N}h}{\mathcal{N}}\right) * n$$

Where: nh = sample size for stratum h
$\mathcal{N}h$ = population size for stratum h
$\mathcal{N}$ = total population size
n = total sample size

Table 1: Sample size determination

Sample Size distribution	Target population	Sample size (Yamane)	% sample proportion
Top management	34	20	12
Middle level management	48	29	18
Lower level management	88	53	33
Sales & marketing force	98	59	37
Total	268	161	100

Source: Researcher's Own Construct (2022)

A questionnaire consisting of 32 questions with a five-point Likert scale (i.e. 1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree) was used as a source of primary data due to the fact that the instrument enables relatively bias-free and cheaper information within a reasonable timeframe. Before administering the questionnaire on the full scale, a pilot testing was conducted with 16 respondents (about 10% of the respondents) to evaluate the completeness, precision, accuracy, and clarity of the questions towards addressing the research problem. The changes and suggestions of the respondents were then incorporated into the questionnaires to ensure that all aspects were sufficiently covered.

To fulfill the stated objective of the study, descriptive statistics methods such as mean and standard deviation and inferential statistics such as Pearson correlation coefficient and multiple linear regression were applied in order to ascertain whether there is statistically significant relationship exists between NPD and OP and; to determine the joint relationship between independent variables on dependent variables.

The regression model for the study is;

$$\mathcal{OP} = \beta^{\circ} + \beta 1\mathcal{PQ} + \beta 2\mathcal{PS} + \beta 3\mathcal{PL} + \beta 4\mathcal{PD} + \varepsilon$$

Where; $\mathcal{OP}$ = Organizational Performance, $\mathcal{PQ}$ = Product Quality, $\mathcal{PS}$ = Product Size, $\mathcal{PL}$ = Product Line and $\mathcal{PD}$ = Product Design

β° = Constant or intercept which is the value of dependent variable when all the independent variables are zero.

$\beta 1 - \beta 4$ =Regression Coefficient for each independent variable

ε= Stochastic or disturbance term or error term

The values of Cronbach's Alpha for each variable are shown in the table 2 below. For the fields, values of Cronbach's Alpha were in the range from 0.701 and 0.805 for each variable and; 0.835 for overall. Therefore, the level of Cronbach's alpha was considered to be consistent and reliable enough to proceed with the data analysis.

Table 2: Cronbach's alpha output summary

S No.	Variable	Cronbach's Alpha	No. of Items
1	Product Quality	.805	6
2	Product Size	.742	4
3	Product Line	.770	4
4	Product Design	.709	4
5	Organizational Performance	.701	8
6	Overall	.835	26

Source: Survey Data Result (2022)

Discussion and Analysis

Introduction

A total of 161 questionnaires were distributed to the four biscuit manufacturing companies found in Addis Ababa. The study managed to receive a total of 136 filled questionnaires which constituted a response rate of 84.47%. According to Edwards et al. (2002), a response rate of 80% and above is viewed as sufficient to enable the researcher to draw adequate conclusions.

Background Information

The collected data illustrates that the male respondents formed the majority of the target population with a percentage of 70.6% and the remaining 29.4% is female. This implies that the majority of the employees in the managerial position and sales and marketing team in biscuit manufacturing companies based in Addis Ababa are male. Considering the overall involvement of females in education and the nature of the job in industry, a researcher found their percentage satisfactory to contribute to the study.

The study required that the respondents indicate the categories in which their age fell. Accordingly, the sample population is largely dominated by respondents who are in the age group below 40 years covering 88.2% of the total number of respondents indicating that most of them are energetic, creative, and have direct involvement in the NPD of their company.

The vast majority (72%) of the study population were degree holders and 26.5% of the respondents were postgraduate and above. Only 1.5% of them were a college diploma or below. This is vital since the respondents' educational background plays a great role in understanding, analyzing, and responding to the questions which in turn avoids inconsistency of responses.

The gathered data also illustrates that the target companies are staffed with an experienced employee who have gained adequate training, exposure, and experience in related fields. Specifically, the data depicts that the majority of the respondents (96.3%) had an experience of 6 years and above implying that there is a highly experienced team in the case organization who can really understand and contribute a lot to this study.

Table 1 indicates that 61.8% of the respondents are managerial personnel while the remaining 38.2% are from sales and marketing team. Of the distributed 161 questionnaires, 25 questionnaires were not returned which is seven questionnaires from sales and marketing, eight from lower-level management, three from middle-level management, and seven questionnaires from top management due to travel, shift work, leave, and absence of respondents, respectively. This shows that relatively proportional data were collected with no traceability problem. Managerial workers are more in number witnessing immense contributions to the study since they are well aware of the day-by-day activities through reports, meetings and other way of information flows to the position they hold.

Table 1: Job Title

Variable	Category	Frequency	Percent	Cumulative percent
Job title	Sales & Marketing team	52	38.2	38.2
	Lower level management	45	33.1	71.3
	Middle level management	26	19.1	90.4
	Top level management	13	9.6	100
	Total	136	100	

Source: Survey data analysis (2022)

Descriptive Statistics

This section presents the descriptive statistics collected through the survey questionnaire in the form of mean and standard deviation. There are different dimensions of new product development that can affect the performance of an organization, specifically in biscuit manufacturing firms. Hence, this descriptive analysis describes and explains the data collected through the questionnaire. Descriptive analysis has the ability to explain the broad dimension of new product development while making analysis and interpreting the results of the mean and standard deviation of the four dimensions (i.e. product quality, product size, product line, and product design. As specifically stipulated in the research methodology section, a five-point Likert Scale was utilized to measure their agreement and disagreement on each question. The scales are reassigned based on Best (1977), cited by Yonas (2013), classification; 1 - 1.8= Strongly Disagree, 1.81 – 2.6 = Disagree, 2.61 – 3.4 = Neutral, 3.41 – 4.20 = Agree and 4.21 – 5 = Strongly Agree

Descriptive statistics for Product quality

In table 2 below; the respondents' response regarding the product quality was rated as an overall value of M= 4.1679. This implies that respondents perceived product quality as a significant asset to their organizational performance because according to Best (1977), the mean score between 3.41 – 4.20 is in the range of "Agree". The value of the standard deviation, SD= .50776, implies that the response of respondents was not much more dispersed from the average value. Hence, this shows that participants' responses are homogeneous and not widely spread from the mean.

Table 2: Descriptive statistics for product quality

	N	Mean	Std. Deviation
Product Quality	136	4.1679	.50776
Valid N (listwise)	136		

Source: Survey data analysis (2022)

Descriptive statistics for Product Size

The respondents' response on product size was rated as an overall mean value of M= 4.2353 which is in the range of "Strongly Agree" (Best, 1977). This implies that respondents believe that product size has an advantage on the performance of their organization. The value of the standard deviation, SD= .49232, implies that the standard deviation value of respondents was not dispersed indicating that the responses are not widely spread from the mean value meaning that the participants' responses are homogeneous.

Table 3: Descriptive statistics for product size

	N	Mean	Std. Deviation
Product Size	136	4.2353	.49232
Valid N (listwise)	136		

Source: Survey data analysis (2022)

Descriptive statistics for Product Line

In table 4 below; the respondents' response on product line was rated with an overall mean value of M= 4.4890. This implies that the respondents strongly agreed that product line has a positive effect on the performance of their organization (Best, 1977; Wang, et al., 2022). The value of the standard deviation, SD = .40468, implies that the responses of the participants are homogenous and not widely dispersed from the mean values.

Table 4: Descriptive Statistics for product line

	N	Mean	Std. Deviation
Product Line	136	4.4890	.40468
Valid N (listwise)	136		

Source: Survey data analysis (2022)

Descriptive statistics for Product Design

The respondents' response on product design was rated as an overall mean value of M= 4.5809. This implies that respondents also strongly agreed that product design has a positive effect on organizational performance. The standard deviation value of respondents, SD= .36878 shows that there is homogenous and narrow dispersion with values closer to the mean value.

Table 5: Descriptive statistics for product design

	N	Mean	Std. Deviation
Product Design	136	4.5809	.36878
Valid N (listwise)	136		

Source: Survey data analysis (2022)

Inferential Statistics

Inferential statistics are used in research to make judgments of the probability or inferences from the data to more general conditions that extend beyond the immediate data alone. Inferential statistics used to determine the relationship between organizational performance and the new product development dimension (i.e. product quality, product size, product line, and product design) are presented as follows;

Correlation Analysis

In order to see the strength of the relationship between the dependent variable and independent variables, a Pearson correlation analysis was performed. Correlation is a word that describes the statistical measure of association or the relationship between two phenomena or continuous variables in terms of how strong the relationship is and in what direction the relationship goes. According to Field (2009), correlation is a very useful means to summarize the relationship between two variables with a single number that falls between r = +1.00, a perfect positive (direct) relationship, and r = -1.00, a perfect negative (inverse) relationship. The general symbol for the correlation coefficient is "r". As stated by Almaquist et al. (2015) a correlation coefficient between + 0.9 to + 0.7 is termed as strong, + 0.6 to + 0.4 is termed as moderate and + 0.3 to + 0.1 is termed as weak.

As it was explained in the conceptual framework, the independent variables that were designed to determine the dependent variable (i.e. organizational performance) were product quality, product size, product line, and product design. Thus, the relationship between these independent variables with organizational performance is computed and presented in table 6 below;

Table 6: Correlation Analysis

		Product Quality	Product Size	Product Line	Product Design	Organizational Performance
Product Quality	Pearson Correlation	1				
	Sig. (2-tailed)					

	N	136				
Product Size	Pearson Correlation	.430**	1			
	Sig. (2-tailed)	.000				
	N	136	136			
Product Line	Pearson Correlation	.275**	-.240**	1		
	Sig. (2-tailed)	.001	.005			
	N	136	136	136		
Product Design	Pearson Correlation	-.017	.358**	-.441**	1	
	Sig. (2-tailed)	.844	.000	.000		
	N	136	136	136	136	
Organizational Performance	Pearson Correlation	.495**	.637**	-.192*	.458**	1
	Sig. (2-tailed)	.000	.000	.025	.000	
	N	136	136	136	136	136

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

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Survey data analysis (2022)

As is shown in table 6 above, the Pearson correlation value for the relationship between product quality and organizational performance was the second highest value having a moderate, positive, and significant relationship as indicated by the obtained value of r=0.495, N=136 & P<0.01.

The finding further indicates that the highest and most significant relationship is found between product size and organizational performance. Pearson correlation values of r=0.637, N=136 & P<0.01 shows that product size has a moderate and positive relationship with organizational performance.

The result of the Pearson correlation coefficient also illustrates that product size has a negative relationship with organizational performance. Concerning the strength of the correlation, there is a negative and weak relationship between the independent variable and the dependent variable with a Pearson correlation coefficient value of r= -0.192, N=136, and P<0.05.

The study further found out Pearson correlation coefficient value of r= 0.458, N=136 & P<0.01 for the relationship between product design and organizational performance showing that there is a moderate, positive, and significant relationship between them.

Multiple Regression Analysis

The cumulative effect of independent variables (i.e. product quality, product size, product line, and product design) over the dependent variable (organizational performance) is also analyzed by using multiple linear regressions. Regression analysis is a statistical method used for the purpose of predicting the values of the dependent variable, given the values of the independent variable, and the determination of a statistical relationship between two or more variables (Kothari, 2004). In multiple regressions, the effect of each independent variable on the dependent variable is estimated while taking into account all independent variables' effects on the dependent variable (Almaquist et al. 2015). According to Kothari (2004), multiple linear regression analysis is applicable if there is more than one independent variable. Hence, multiple linear

regression was utilized in this research in order to analyze the cumulative effect of independent variables (new product development) over the dependent variable (organizational performance).

A regression model summary is one output of multiple regression analysis that measures the amount of total variation on the dependent variable due to the independent variable. This table provides the R, R2, adjusted R2, and the standard error of the estimate, which can be used to determine how well a regression model fits the data.

The study established that there was a strong relationship (R= 0.749) between new product development and the performance of the organization. The study also recorded an adjusted R-squared value of 0.548 implying that new product development accounts for 54.8% of the total variance in the performance of biscuit manufacturing companies found in Addis Ababa. In another word, 54.8% of the organization's performance can be explained by variation in new product development leaving 45.2% unexplained.

Table 7: Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749[a]	0.561	0.548	0.20304

a. Predictors: (Constant), PD_Average, PS_Average, PQ_Average, PL_Average

b. Dependent Variable: OP_Average

Source: Survey data analysis (2022)

ANOVA Test

Analysis of Variance (ANOVA) was done to verify the goodness of fit of the regression model. If the F ratio is large and the probability is less than 0.05 then it is termed statistically significant (Saunders, 2012). The regression model recorded a significance level of 0.000. This implies that the model had a goodness of fit and was very ideal for determining how new product development affects the performance of the organization. The regression model in table 8 below had a significance value (p-value) of less than 5% and F - value (41.924) indicating that the model was statistically acceptable and the value of the variation explained by the model is not due to chance.

Table 8: ANOVA[a]

ANOVA[a]

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.914	4	1.728	41.924	.000[b]
	Residual	5.401	131	0.041		
	Total	12.314	135			

a. Dependent Variable: OP_Average

b. Predictors: (Constant), PD_Average, PS_Average, PQ_Average, PL_Average

Source: Survey data analysis (2022)

Regression Coefficients

Beta-coefficient basically measures the variance of dependent variable caused by independent variable in the model. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable that is explained by all independent variables (product quality, product size, product line, and product design).

As is shown in table 9 below, there is a positive association between all independent variables and organizational performance, except product line. However, there is a negative association between product lines and organizational performance. Besides this, the last column designated by "sig." shows the p-values of all the three new product dimensions are below 0.05 ($p<0.05$) which means that the association between the three determinant variables (i.e. product quality, product size, and product design) and organizational performance is statistically significant. Whereas product line has a p-value above 0.05, ($p= 0.288$), meaning that there is no significant association between product line and organizational performance in biscuit manufacturing firms found in Addis Ababa.

The results of multiple linear regressions revealed that product quality has a positive and significant effect on organizational performance with a beta value (β =.22), at a 95% confidence level ($p < 0.05$). This implies that a unit increase in product quality will increase organizational performance by 22%.

Taking all other independent variables at zero, the unstandardized coefficient of beta and p-value of product size has a positive and significant effect at (β = .215, $p < 0.05$). This implies that, if product size increases by 1 percent, organizational performance will increase by 21.5%.

The product line has a negative and insignificant effect with β = - .056, table 9. This implies that when the product line decreases by 1 percent then organizational performance will decrease by -5.6%, p-value > 0.05 shows that its contribution to organizational performance is also insignificant.

The findings presented also show that product design has a positive and significant effect on organizational performance with (β = .251), at a 95% confidence level ($p < 0.05$). This implies that, if product design increases by 1 percent, organizational performance will increase by 25.1%. By having the highest beta coefficient value product design highly predicts the variation in organizational performance.

Table 9: Regression Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.765	.404		4.364	.000
	Product Quality	.22	.042	.37	5.211	.000
	Product Size	.215	.045	.35	4.797	.000
	Product Line	-.056	.053	.075	-1.067	.288
	Product Design	.251	.055	.306	4.54	.000

a. Dependent Variable: OP_Average

Source: Survey data analysis (2022)

Overall, beta values have been used to compare the contribution of each independent variable in order to identify the most significant factors influencing the organizational performance in biscuit manufacturing companies based in Addis Ababa. Hence, product design had the highest influence on organizational performance followed by the product quality and product size whereas product line had an insignificant effect on organizational performance with a $p>0.05$. A low p-value (< 0.05) indicates that there is sufficient evidence to conclude that the coefficient does not equal zero. Changes in the predictor (product quality, product size, product line, and product design) are associated with changes in the response variable. Therefore, the estimated regression equation is used to predict the value of organizational performance for any given values (responses) to the independent variables. As interpreted above, for every one-unit increase in each of the independent variables; product quality, product size, and product design there will be an increase in organizational performance by 22%, 21.5%, and 25.1%, respectively. Whereas, for every one-unit increase in product line there will be a 5.6% decrease in the performance of biscuit manufacturing companies based in Addis Ababa. Constant is basically the intercept. Therefore, the value of the constant, β°= 1.765, cannot be

ignored but it does not affect the result in a direct or indirect way. It just shows that even if the independent variable has zero value, there will be still some value for the dependent variable.

The statistical regression equation of the model

$$\mathcal{OP} = \beta^{\circ} + \beta 1\mathcal{PQ} + \beta 2\mathcal{PS} + \beta 3\mathcal{PL} + \beta 4\mathcal{PD} + \varepsilon$$

becomes;

$$\mathcal{OP} = 1.765 + .22\mathcal{PQ} + .215\mathcal{PS} - .056\mathcal{PL} + .251\mathcal{PD}$$

Where; $\mathcal{OP}$ = Organizational performance, $\mathcal{PQ}$ = Product quality, $\mathcal{PS}$ = Product size, $\mathcal{PL}$ = Product line and $\mathcal{PD}$ = Product design

Discussion of the Findings

The study was conducted with the aim of assessing the effect of new product development on organizational performance in biscuit manufacturing companies based in Addis Ababa. Organizational performance is the dependent variable whereas the new product development is the independent variable of the study measured by four dimensions (product quality, product size, product line, and product design). Both descriptive and inferential statistics were conducted to analyze the collected data. Descriptive analysis was computed based on the mean and standard deviation for the average values of each variable. The arithmetic mean values show that all the variables scored strongly agree except for product quality, which scored agree. Standard deviation results for all variables are homogenous having a result that is not widely dispersed from the mean. Inferential analysis was also computed using Pearson correlation analysis to evaluate the relationship between the variables and multiple linear regression analysis to evaluate the linear relationship between the dependent and the independent variables. Results are discussed as follows;

The value of the Pearson correlation coefficient for one of new product development dimensions such as product quality is r=0.495. This result shows that there is a moderate, positive, and significant relationship with an organizational performance at the level of 0.01. In addition, the regression analysis result shows that product quality has statistically significant values (p=<0.05, i.e. p=0.000) with a positive beta value, β = .22, explaining the direct effect on the performance of biscuit manufacturers in Addis Ababa. The results agree with the findings of Udegbe et al. (2013) and Nwokah et al. (2009) who found a higher impact of this product development facet on sales volume, profitability & other organizational performance measurements. Joy et al. (2013) also prove that there is an existence of a positive and significant relationship between higher product quality and the sales growth of an organization.

Product size have a moderately positive relationship with organizational performance with the value of Pearson correlation coefficient r= 0.637 and significant correlation at the level of 0.01. In addition, the study established that product size, β= .215, has statistically significant values with a (p<0.05, i.e. p= 0.000) and a positive beta value explaining its direct effect on the performance of biscuit manufacturers in Addis Ababa. This is different from the findings of Nwokah et al., (2009) who found an insignificant relationship between product size and organizational performance.

A weak and negative relationship was observed between product line and organizational performance at a Pearson correlation value of r= -0.192. The study also established that the product line has a statistically insignificant value of (P= 0.288, i.e. p>0.05), with a beta value of β= -.056 explaining how the variable affects the performance of biscuit manufacturing companies negatively. These results disagree with the findings of Nwokah et al. (2009) in which product development facets of product lines were positively and significantly correlated with the corporate performance indicators of profitability, sales volume and customer loyalty.

A Pearson correlation value of r=0.458 was witnessed between product design and organizational performance showing that there is a moderate, positive and significant correlation (at the level of 0.01)

between this dimension of new product development and organizational performance. Product design affects the performance of biscuit manufacturing companies positively and significantly with p<0.05, (p= 0.000), with a positive beta value of β= .251. This is in agreement with the findings of Joy et al., (2013) who studied the effect of product design and quality as independent variables in their research on product differentiation: a tool of competitive advantage and optimal organizational performance. However, it is against the findings of Nwokah et al. (2009) who exhibited an insignificant relationship between product design versus organizational performance indicators such as; profitability, sales volume, and customer loyalty.

Pearson correlation test conducted for each independent variable and dependent variable shows a moderately positive correlation except for product line. All the new product development dimensions except product line have statistically significant values (p<0.05) which is suitable for explaining the relationship between new product development versus organizational performance and how the selected independent variables affect the performance of biscuit manufacturing companies found in Addis Ababa. The model summary revealed that the independent variables explain 54.8% of the change in the dependent variable. The other factors not studied in this model account for 45.2% of changes in the performance of target companies. The model is fit at a 95% level of confidence and the F-value is 41.924. Therefore, the overall multiple regression model can be said that statistically significant.

In general, the findings of this thesis are consistent with most and differ from some of the previously done empirical researches. The aforementioned results are in agreement with the findings of Benson et al. (2015), Udegbe et al. (2013), Marcus (2017), Masaku (2017), Joy et al. (2013) and partially in agreement with the findings of Nwokah et al. (2009) in terms product quality and product lines. However, the findings are partially in disagreement with Nwokah et al. (2009) findings in terms of product size and product design versus profitability, and sales volume. The difference in the result might have been created because the adoption of NPD practice depends on product character, cultural aspects & ecosystem of countries or regions where a company operates (Echeveste et al., 2017).

Conclusion and Recommendations

This empirical work was aimed at examining the effect of new product development on organizational performance taking biscuit manufacturing companies located in Addis Ababa. Based on the quantitative analysis; product size, product quality, and product design have a positive relationship and statistically significant value with profitability and sales volume meaning that any change in those new product dimensions will directly affect the profitability and sales volume of the target organization which in turn affects their overall performance. Whereas product line has a negative and statistically insignificant relationship. Thus, the study concluded that three new product development dimensions (success factors) such as product quality, product size, and product design positively and significantly affect the performance of biscuit manufacturing companies based in Addis Ababa

Based on the major findings of the study, the following activities are recommended for the organization;

- The company should give more emphasis to new product development dimensions affecting organizational performance such as product quality, product size, and product design.
- The case company should work on new product quality dimensions (i.e. product performance, features, consistency, compliance, durability, and perceived quality) continuously to improve organizational performance.
- The case company should revise, introduce and diversify product size dimensions (i.e. product dimension, product weight, packaging strategy, and packaging size) intensively to increase the performance of the case organization.
- The case company, in addition to their existing practice, should work on updating product design dimensions (i.e. product composition, packaging design, labeling and communication, and; ease of use) to improve its performance.
- New product development should be an integral component to the case companies to improve the performance of their organization through investment in research and development to promote the company's superior and further adoption of market responsive strategies to offer a company's competitive advantage.

In addition to their existing practice, the companies need to make periodical assessments of their products, competitors as well as imported products and make competitive adjustments over its company.

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