



AN EMPIRICAL STUDY ON RELATIONSHIP BETWEEN REVENUE AND ADVERTISING EXPENDITURE: EVIDENCE FROM PROCTER & GAMBLE

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ABSTRACT

This study investigates the relationship between advertising expenditure and company revenue using data from Procter & Gamble (P&G) over a 13-year period. Descriptive, correlational, and regression analyses were conducted to determine whether advertising significantly influences P&G's revenue growth. The findings reveal a strong positive correlation ($r = .822$, $p < .001$) between advertisement spending and revenue, suggesting that higher advertising expenditure is associated with increased sales performance. Regression results further indicate that advertising accounts for approximately 67.5% of the variance in revenue. These results reinforce the theoretical argument that advertising plays a crucial role in enhancing brand visibility and driving financial performance. The study concludes with implications for marketing strategy and recommendations for optimizing advertising investments to sustain corporate growth.

1. INTRODUCTION

In a dynamic and highly competitive global marketplace, companies invest significantly in advertising to maintain visibility, attract consumers, and stimulate sales. Procter & Gamble (P&G), one of the world's largest consumer goods corporations, is renowned for its strong brand portfolio and marketing expertise. Given the company's vast product range—from household care to personal hygiene—advertising plays a central role in influencing consumer preferences and purchasing behaviour.

The relationship between advertising expenditure and revenue has long been debated in marketing and economics literature. While many studies suggest a positive association, the magnitude and sustainability of advertising's impact on sales remain context-dependent. This study aims to empirically examine the statistical relationship between P&G's advertising expenditure and its revenue over a 13-year period using descriptive statistics, correlation, and regression analyses. Understanding this relationship provides valuable insights for optimizing marketing budgets and improving financial performance.

2. LITERATURE REVIEW

Advertising is widely regarded as a strategic investment that enhances brand equity, awareness, and consumer loyalty. According to Tellis (2009), advertising functions as both an informative and persuasive tool, influencing short-term sales and long-term brand growth. Similarly, Keller (2013) emphasized that strong brand communication fosters positive consumer attitudes and purchase intentions, which ultimately contribute to revenue generation.

Empirical evidence supports the notion that advertising positively affects sales performance. For instance, a meta-analysis by Sethuraman, Tellis, and Briesch (2011) found that the elasticity of sales to advertising typically ranges from 0.1 to 0.3, indicating a moderate but consistent effect across industries. In the context of consumer goods firms, Vakratsas and Ambler (1999) noted that advertising enhances consumer recall and reinforces brand preference, leading to higher market share and profitability.

Several studies have specifically examined P&G's marketing strategy. Jones (2018) highlighted that P&G's sustained investment in brand-building campaigns has helped it maintain leadership across multiple product categories. Likewise, Dahlen, Lange, and Smith (2020) argued that P&G's ability to integrate emotional storytelling and product functionality in advertisements contributes to its robust financial results. However, some scholars caution that the effectiveness of advertising may diminish over time due to market saturation or diminishing returns (Dekimpe & Hanssens, 1999). Therefore, analyzing the quantitative link between advertising expenditure and revenue is essential for validating the efficiency of marketing spending.



3. OBJECTIVES OF STUDY

1. To ascertain whether there exists any relationship between profit earned & expenses incurred on advertisement
2. To measure the extent to which expenses incurred on advertisement influences on profitability of the company
3. To develop a model explaining the relationship between the two variables

4. METHODOLOGY

This study employs a quantitative correlational research design to examine the relationship between advertising expenditure and company revenue. The analysis uses annual data for 13 years from Procter & Gamble, focusing on how variations in advertising spending influence revenue outcomes.

The study period covers a time span of 13 years commencing from 2012 to 2024. The necessary data for the analysis were collected from the annual reports of Procter & Gamble, different websites such as statista.com, macro trends.net, moneycontrol.com, Investopedia & Wikipedia.

Relevant research papers were also consulted to generate the methodology.

Dependent Variable for the analysis: Revenue (measured in million USD)

Independent Variable for the analysis: Advertising Expenditure (measured in billion USD).

Descriptive statistics, Pearson correlation, and simple linear regression analyses were performed using SPSS. The significance level was set at $p < .05$. The regression equation is estimated as

$$\text{Revenue} = \beta_0 + \beta_1(\text{Advt}) + \varepsilon$$

5. ANALYSIS OF THE DATA

The analysis of data is done starting from descriptive statistics, followed by Pearson Correlation, Regression analysis and finally model summary.

Descriptive Statistics			
	Mean	Std. Deviation	N
Revenue	74265.0000	6923.40333	13
Advt	7.7169	.73557	13

The descriptive results show that P&G's average annual revenue is approximately \$74.3 billion, with a mean advertising expenditure of \$7.72 billion.

Correlations			
		Revenue	Advt
Pearson Correlation	Revenue	1.000	.822
	Advt	.822	1.000
Sig. (1-tailed)	Revenue	.	.000
	Advt	.000	.
N	Revenue	13	13
	Advt	13	13

The Pearson correlation coefficient ($r = 0.822$) indicates a strong positive correlation between advertising expenditure and revenue.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	388270135.937	1	388270135.937	22.848	.001 ^b
	Residual	186932028.063	11	16993820.733		
	Total	575202164.000	12			
a. Dependent Variable: Revenue						
b. Predictors: (Constant), Advt						



Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	14589.060	12536.934		1.164	.269	-13004.546	42182.666
	Advt	7733.126	1617.833	.822	4.780	.001	4172.300	11293.952
a. Dependent Variable: Revenue								

The regression equation can be expressed as: Revenue = 14,589.06 + 7,733.13(Advt). This indicates that for every \$1 billion increase in advertising expenditure, revenue increases by approximately \$7.73 billion.

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.822 ^a	.675	.645	4122.35621	.675	22.848	1	11	.001	1.517
a. Predictors: (Constant), Advt										
b. Dependent Variable: Revenue										

The regression results reveal that 67.5% of the variance in revenue can be explained by changes in advertising expenditure, with $F(1,11) = 22.85$, $p = .001$. Residual statistics show that the model fits the data appropriately (Durbin-Watson = 1.517).

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	66787.6641	88827.0703	74265.0000	5688.21981	13
Residual	-5277.89355	6789.23047	.00000	3946.85558	13
Std. Predicted Value	-1.315	2.560	.000	1.000	13
Std. Residual	-1.280	1.647	.000	.957	13
a. Dependent Variable: Revenue					

5. DISCUSSION

The results of this study demonstrate a strong, statistically significant relationship between advertising expenditure and P&G's revenue performance. This finding aligns with previous literature that positions advertising as a critical driver of sales and brand performance (Keller, 2013; Sethuraman et al., 2011). From a strategic perspective, P&G's consistent investment in advertising supports its ability to maintain customer loyalty and global market dominance. However, it is essential to acknowledge that advertising is not the sole determinant of revenue. Other factors such as product innovation, distribution efficiency, and pricing strategies may also contribute significantly to financial outcomes.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study concludes that advertising expenditure exerts a strong and statistically significant positive effect on P&G's revenue. The correlation coefficient ($r = .822$) and regression results confirm that advertising explains approximately 67.5% of the company's revenue variation. Therefore, advertising remains a vital tool for sustaining growth, reinforcing brand equity, and driving long term profitability.

6.2 Recommendations:

1. Sustain strategic advertising investment.
2. Monitor ROI and optimize marketing budgets.
3. Utilize data analytics for predictive insights.
4. Diversify media channels to maximize reach.



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