



The Investment in advertising and its effect on the Medium Enterprises of Guayaquil

La Inversión en publicidad y su efecto en las Medianas Empresas de Guayaquil

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Abstract

The Analysis of alternatives to improve sales in medium-sized companies may present the dilemma about how effective it will be to invest in Advertising; Although referents of the application of marketing strategies confirm the effects of information, persuasion and recall obtained by advertising, the current economic and social contexts demand better arguments of support. Therefore, and despite the fact that there may be a number of variables related to other marketing, administrative, or financial components; the study sought to determine the effect of advertising in relation to sales of midsize companies in Guayaquil in 2015, using the linear regression model, achieving determining the elasticity of the ln dependent variable sales over the independent variable ln Advertising Expenses is 3.21, concluding that sales are influenced by changes in advertising expenses, corroborating the affirmations established in the different theoretical references, the importance of an effective advertising campaign and the need to start measuring it as an investment And not as an expense.

Resumen

El análisis de las alternativas para mejorar las ventas en las medianas empresas puede presentar el dilema sobre qué tan efectivo será invertir en publicidad. Si bien es cierto que referentes de la aplicación de estrategias de mercadotecnia confirman los efectos de información, persuasión y recordación que obtiene la publicidad, los actuales contextos económicos y sociales exigen mejores argumentos de apoyo. Por lo tanto, y a pesar de que pueden presentarse un sinnúmero de variables relacionadas a otros componentes del marketing, de gestión administrativa, o financiera; el presente estudio procuró determinar el efecto de la publicidad con relación a las ventas de las medianas empresas de Guayaquil en el año 2015, aplicando el modelo de regresión lineal. Como principales resultados se logra determinar que la elasticidad de la variable dependiente «ln Ventas» respecto de la variable independiente «ln Gastos» de Publicidad es de 3.21, concluyendo que las ventas son influenciadas por los cambios en los gastos de publicidad, corroborando las afirmaciones establecidas desde los diferentes referentes teóricos sobre la importancia de una campaña publicitaria efectiva y la necesidad de empezar a medirla como inversión y no como un gasto.

Keywords | Palabras clave

Marketing, Business, Sales, Advertising, Expenses, Investment
Mercadotecnia, Empresas, Ventas, Gastos, Publicidad, Inversión.

1. Introduction

One of the challenges for entrepreneurs is to achieve sustainable results over time that will allow them to maintain the principle of «business running». Some studies in this regard affirm that for this to happen the company must be market oriented by gaining competitive advantage, emphasizing on the continuous generation of value for the buyer and trying to ensure its survival in the medium and long term (Álvarez, Santos and Vázquez, 2001, Kohli and Jaworski, 1990, Narver and Slater, 1990). Often small and medium-sized enterprises (SMEs) are found that because of lack of knowledge or lack of budget are still caught in passive approaches, that is, focused on producing or marketing products and that when trying to sell them have no loyal customers, since the products or services do not meet their expectations. Investors in these companies have to make a change of approach, involving active marketing in their strategies. Analyzing some postulates about marketing can be concluded that it is clear that organizations must pay attention to the mechanisms necessary to capture value from and for their customers, endorsing Marketing as an exchange of value between individuals and organizations in order to achieve what they need and thus meet their needs (Armstrong & Kotler, 2013). It is interesting to note how in the new orientations the importance of creating and maintaining relationships with customers is already beginning to be emphasized in companies, because not only must be limited to the application of a «marketing plan», but must be known manage the relations of exchange with its clients after having applied the strategies of Marketing Mix.

Rojas (2016) affirms that in addition in the new currents importance is given to the technology boom and how the company must face the new way of attracting customers and surviving the collaborative and digital economy. For its part Kotler et al. (2002, pp. 48-51) includes the latest marketing concepts defined by AMA (2004) as a set of processes that identify, create and distribute value to develop satisfactory and long-term relationships that contribute to corporate profits.

Therefore, not only entrepreneurs, but marketers, must recognize the importance of financial decision-making, creating a security context that will support the implementation of successful marketing strategies. (Dominguez Doncel & Muñoz Vera, 2010).

Monferrer (2013) states that it is significant that communication acts on current and potential customers; hence the importance of advertising as a mechanism to publicize these products to consumers who are demanding them. According to Rojas (2016) citing Talaya et al. (2008), advertising is defined as a communication process that is made by the issuer (seller) to a group of recipients (actual or potential consumers), with the aim of publicizing the value benefits of their products or services, persuading them for their purchase.

For Kotler (2001) one of the most complex decisions in marketing is the budgeting of advertising and promotion because they must be effective when allocating budget to the promotion of sales, advertising, public relations, direct marketing and strength sales, as it is needed. There are some forms that companies use to allocate resources to this item, one of the most used being the setting of goals based on the percentage of sale. However, for the author (op. Cit.), the most beneficial method is that of «objective and task», since it needs to first set the objectives of advertising and then define the costs of each activity that will be required.

It is also important to take into consideration the strategy that will be proposed to achieve the objectives defined in advertising budgets. In this sense Kotler (2001) details four factors that should be taken into account when making the advertising budget: i) the life cycle of the product; (ii) market share; (iii) competition and; iv) the possibility of substitution of the product.

According to Rojas (2016), promotional and advertising budgets can be costly for companies, especially for Small and Medium Enterprises (SMEs). Due to this, at the moment of the decision making regarding the investment in resources that generate income, it is precisely the advertising one of the items that originates certain doubts. For this reason it is common practice to relieve the expenses for communication and marketing to aspects such as human talent or production, as the influence or not of advertising in the results of the company is not clearly determined.

In the present research work, it was not projected to evaluate how the medium-sized companies established advertising and promotion budgets, or if the methods used were the ideal ones, but rather to analyze how promotion and publicity expenses reflected in their

income statements caused an increase in sales. However, considering that every entrepreneur seeks to maximize the profits of the company, it is important to know if their resources are being invested efficiently. Therefore, an attempt is made to evaluate the effect of the investment of advertising on sales results, taking as a sample frame the medium-sized enterprises of Guayaquil (Guayas, Ecuador) during the year 2015.

2. Methodology

According to Hernández-Sampieri (2006), the collection of information is the way of collecting data on variables of what is analyzed. This research uses a quantitative approach, because, as mentioned by the authors mentioned above, it is necessary to collect data in order to be able to prove with statistical analysis, in this specific case, the effect of the investment of advertising on the sales of the medium-sized companies in Guayaquil. The deductive method was used, because it begins by examining studies, theories, analyzes and writings carried out worldwide on the impact of advertising investment on corporate income. The type of research is causal, while the design is quantitative.

2.1. Population and sample

The study subjects are the medium-sized companies in Guayaquil. To reach the sample, several discard criteria were followed, analyzing the company base published by the Superintendency of Companies of Ecuador. Part of the definition of Small and Medium Enterprises typified in the Organic Code of Production, Trade and Investment. According to the report of the Superintendency of Companies, it is established that the companies are classified by their size in Micro, Small, Medium and Large. In order to obtain a selected database, information from the Internal Revenue Service was used. According to the data corresponding to this base, the universe is established in 46,893 active and manageable companies, registered in the Single Registry of Contributors of Zone 8 (constituted by the cantons of Guayaquil, Samborondón and Durán). Based on this data set, in order to constitute the sample of the medium-sized companies of the city of Guayaquil, the discard of 6,545 companies that were supervised by other organisms other than the Superintendency of Companies was carried out.

After the first discard, 40,348 companies controlled by the Superintendency of Companies remained; of them 3,280 were discarded for belonging to the cantons of Samborondón and Daule, being, by differentiation, 37,068 companies of the city of Guayaquil. Subsequently the data was sorted by branches or sectors of the economy based on the ISIC¹ code. Based on this judgment, 6,283 companies are excluded from the database, which are responsible for 12 sectors of activities with low commercial representation and which may distort the results of the analysis. Therefore, 30,785 companies remained.

Then, based on the criteria of companies that submitted their income tax return for the year 2015, 20,438 were selected, since it is understood that they are companies with current commercial activity. Of that group, the companies whose total income expressed in the Income Tax statement fluctuated between USD 1,000,001.00 and USD 5,000,000.00, which corresponds to the classification of medium-sized enterprises according to the Organic Code mentioned above were discarded. As a result of this fourth screening, 2,174 medium-sized companies from the city of Guayaquil were obtained, which correspond to the actual sample for the present study and which are presented by item, sales and advertising investment in Chart 1.

Chart 1. Extract of n Medium Enterprises of Guayaquil by Sector

SECTOR	NORDEN	TOTAL OF SALES	TOTAL ADVERTISING EXPENDITURE
Accommodation and food service activities.	49	98 518 570,35	837 028,60
Activities of human health care and social assistance.	59	128 739 490,20	389 772,18
Real estate activities.	73	128 236 236,21	1 137 099,18
Professional, scientific and technical activities.	159	321 740 118,79	6. 108 297,47
Agriculture, animal husbandry and fishing.	261	526 949 003,31	250 256,33
Wholesale and Retail; repair of motor vehicles and motorcycles.	976	2 160 955 593,12	11 661 466,14

1 Systematic classification of all economic activities whose purpose is to establish harmonized codification at the global level.

SECTOR	NORDEN	TOTAL OF SALES	TOTAL ADVERTISING EXPENDITURE
Construction	162	321 893 390,89	292 472,80
Manufacturing industries.	258	572 782 166,62	3 410 424,45
Other service activities.	32	54 780 740,13	281 633,86
Transport and storage.	145	294 650 992,24	484 525,29
Total USD (US\$)	2174	4 609 246 301,86	24 852 976,30

Source: Internal Revenue Service
Note: * Taken from Rojas (2016)

2.2. Hypothesis

This research tries as a starting hypothesis to determine if allocating advertising capital would increase the sales of the companies under analysis. A second hypothesis raises the question of whether sales are further increased by the influence of market share.

2.3. Variables

The study analyzes three variables: i) sales amount (dependent variable); ii) total advertising and promotional expenses (independent variable); (iii) market share (independent variable). The latter was considered because sales determine market share. This information corresponds to data from accounting items expressed in USD, whose information was acquired from secondary sources such as the database of the Superintendency of Companies and the Internal Revenue Service, as seen in the statements reported by the companies as results of the fiscal year. It should be noted that the study does not consider other variables that may also affect the company's results, such as discounts on sales and other promotions and direct or distribution sales strategies, since the central theme of the analysis is advertising and its importance as a tool of communication, persuasion and memorization of the message of sale.

2.4. Statistical analysis

According to Gujarati & Porter (2010), there are models that can be linear in the parameters. However, in the nonlinear variables they require a transformation of the variables to obtain a better interpretation of the results of the regression model. Thus, the present study uses

the Log-linear model, and as tool was used XLSTAT, with which this linear regression model was applied.

In order to apply the linear regression formulas, in the case of the dependent variable, data were taken from the revenues published by the internal revenue service that relate to its usual movements such as sales, amounting to USD 4,609,246,301, 86 in total declared sales (see Charts 1 and 2). In the case of the independent variable “publicity expenses”, the amounts declared in the tax services were chosen under the concept of “advertising and promotion costs and expenses”, amounts that were incorporated in relation to the present analysis: USD 24,852,976, 30 (see chart 1).

For Gujarati & Porter (2010), using only two variables, dependent and explanatory, is not so real in practice. The situation is that on the variable “sales” there may be many variables that can affect it; therefore, in the present investigation another independent variable is included as is the “market share”. To determine the value corresponding to this variable the information of the variable “sales” was used, explained in previous paragraphs; thus establishing the total value of operational sales of each economic sector. Subsequently, the percentage of sales of each Guayaquil medium-sized company was obtained, thus determining the market share corresponding to its sector, as shown in Chart 2.

**Chart 2. Income Tax Declaration Year 2015- 2175
 Medium-size Enterprises of Guayaquil**

CAS.	DESCRIPTION	VALUE USD
6999	Total, of declared income	4.687.592.567,54
Selected cells corresponding to operating income:		
6001	Net local sales taxed at 12% VAT rate	2.380.221.449,47
6005	Local services taxed with 12% VAT rate	655.389.176,26
6002	Exempt value local net sales taxed with 12% VAT rate	49.193,47
6003	Net local sales taxed at zero tariff or VAT exempt	976.711.407,17
6007	Local services taxed at zero tariff or exempt from VAT	247.224.527,20
6008	exempt local value of services services taxed at zero tariff or exempt from VAT	1.166.750,33
6004	Exempt value local net sales taxed at zero rate or exempt from VAT	2.968.933,48
6009	Net exports of goods	161.366.315,62

CAS.	DESCRIPTION	VALUE USD
6011	Net exports of services	47.046.720,67
6012	Net exempt value of services	1.344.995,19
6010	Net exempt value of goods	11.833,68
6013	Income from construction services	103.532.370,96
6091	Other income from abroad	2.204.075,67
6015	Income earned under commissions or similar	13.890.740,35
6092	Exempt value other income from abroad	1.289.397,29
6017	Income from operating leases	14.828.415,05
Total sales base for the analysis		4.609.246.301,86

Source: Internal Revenue Service

2.5. Log-linear model

Because the data on the variables «sales», «advertising expenditure» and «market share», are highly disaggregated; the variables were transformed to «ln», which will better express the model. After explaining the variables used in the multiple linear regression model, we try to point out the relationship of these variables and the effect of advertising investment on the sales horizon of Guayaquil's medium-sized companies, in percentage terms.

3. Results

When the data referred to above is integrated in the XLSTAT statistical tool, the explanatory variable is the advertising and promotional expenditure expressed in «ln», and the variable response is the «ln Revenue from sales»; that is to say that the variable of «promotion and publicity» can manifest the level of sales of the medium-sized companies of Guayaquil. The data present a linear relationship directly proportional.

3.1. Descriptive Statistics

With a confidence interval of 95% and a tolerance level of 0.0001, the descriptive statistics of the studied variables are presented below:

Chart 3. Descriptive statistics of analyzed variables

Variable	Observations	Obs. with lost data	Obs. without lost data	Minimum	Maximum	Mean	Typical Dev.
In Sales	1093	0	1093	13,545	15,419	14,527	0,46
In Advertising Expenses	1093	0	1093	1,902	14,66	8,111	2,143
In market share	1093	0	1093	-7,806	-2,686	-5,997	1,131

The descriptive statistics of the variable «In sales» show a standard deviation of 0.46, with a mean of 14,527 in a range between 12,545 and 15,419, while in the case of the variable «In advertising expenditure» there is a typical deviation of 2.143. In addition, it is sought to determine if the coefficient R^2 fits the linear regression profile to the data. Thus, the model establishes the degree of relationship of the variables, not a causal relationship.

Gujarati & Porter (2010) mention that there are many researchers trying to adjust their models to a coefficient close to 1 to demonstrate their effectiveness. However, the aforementioned authors mention that the researcher should focus more on the statistical results of the explanatory variables with respect to the dependent variable. In this way they conclude that the fact that the result of the coefficient of determination is far from 1 does not mean that the model is bad. Chart 4 presents the regression results of the variable «In sales» with goodness of fit, with the coefficient of determination R^2 being 12%.

Chart 4. Linear Regression of Variables

Regression of the variable In VENTAS: Statistics of goodness of fit (In sales):	
Observations	1093
Sum of weights	1093
GL	1090
R^2	0,124
R^2 adjusted	0,122

3.2 Variance analysis

It is possible to determine the variability of «In sales» by means of the information obtained from the analysis of variance of the two independent variables (Chart 5).

Chart 5. Analysis of Variance and Sum of Squares

Variance analysis (In sales):					
	L	Sum of median	Squares median		r > F
Model		8,609	4,305	7,024	0,0001
Error	090	02,429	,186		
Total corrected	092	31,039			
Calculated against model $Y = \text{Median}(Y)$					
Analysis Sum of Squares Type I (In sales):					
Source	L	Sum of median	Squares median		r > F
In Advertising expenses		,888	,888	1,706	0,0001
In Market share		2,721	2,721	22,343	0,0001
Analysis Sum of Squares Type III (In sales):					
Source	L	Sum of median	Squares median		r > F
In Advertising expenses		,17	,17	7,841	0,0001
In Market Share		2,721	2,721	22,343	0,0001

Because the p-value (probability value) is greater than the F-statistic in the model and hence in the two independent variables, it can be interpreted that the information given by the independent variables «In advertising costs» and «market» significantly explains the variability of «In sales» as well as the influence of the «market share» variable.

3.3. Regression analysis

Finally, the elasticity of the dependent variable «In sales» is determined with respect to the independent variable «In advertising expenses».

Chart 6. Regression analysis

Model parameters (Ln sales)						
Source	Value	Standard Error	T	Pr> t	Lower Limit (95%)	Higher limit (95%)
Interception	15,032	0,087	172,269	<0,0001	14,861	15,203
In Advertising expenditure	0,032	0,006	5,276	<0,0001	0,02	0,044
In Market share	0,128	0,012	11,061	<0,0001	0,105	0,15

Linear Regression (lnSales) equation:

$$\text{ln SALES} = 15,032 + 3,21 * \text{In Advertising Expenditure} + 0,128 \text{ Market Share}$$

As a result of the application, the elasticity of the dependent variable «ln sales» with respect to the independent variable «ln advertising costs» is 3.21, which indicates that if the other variables remain the same, a 1% increase in «In expenditure in advertising», corresponds to a 3.21% increase in «ln sales», so it is evident with meridian clarity that in the case of analysis sales are directly impacted by changes in advertising expenses.

4. Discussion

The results of the present investigation demonstrate the importance that is being given to the investment variable in promotion and publicity, with respect to the variation in sales in a group of Medium Enterprises of the city of Guayaquil. It is significant to clarify that the investment in promotion and advertising reflected as an expense in a company's income statement is not the only variable that affects the variation in sales, as already mentioned in reference.

However, the study is consistent with the statements of other authors that show that sales and profits are directly related to advertising and that they are important variables to be able to evaluate if it is really being effective in advertising investment, the benefit being product of the unit margin for the units sold. However, for all companies, the same result does not emerge because it can vary for different reasons such as different costs, prices, among others (Tellis & Redondo, 2002).

Kotler (2001) affirms the importance of marketing and its strategies - among which is advertising -, as the company begins to give it

more force, its sales potential is approaching its potential market, establishing a direct relationship between the level of sales and the level of marketing, which is evident in the analysis carried out.

It should be mentioned other studies with similar results to the present one, considering the study carried out by Sellamen-Garzón & Arce-Meza, (2010) on the advertising decisions and their influence on the sales of the products in stores in Bogotá, who concluded that applying the linear regression method shows a direct relationship between the quantities demanded and the investment in advertising.

Tellis and Redondo (2002) point out that there is some research on the relationship between advertising and sales, which have provided good results on the effects of advertising, as well as certain field studies that have had as a result that if the advertising pressure is increased at 1%, a 0.01% increase in sales is going to be obtained.

5. Conclusion

According to the multiple linear regression model applied in the present research work with the data of the medium-sized companies of the city of Guayaquil, it is concluded that the variables: a) sales, b) advertising expenditure and c) market share, are directly related, being the «sales» variable dependent on the explicative variables «advertising» and «market share».

It was also shown that as advertising expenditure increases, the level of sales increases, which corroborates the conclusions established in the different theoretical references mentioned in the present research work. Because many of the authors quoted above refer to Marketing from a theoretical perspective, they emphasize the importance of applying marketing strategies with the objective of satisfying the consumer, creating value-sharing relationships and, therefore, achieving the goals of companies, maximizing the profits of shareholders or investors.

It should be mentioned that the results of the investigation showed that the medium-sized companies in the city of Guayaquil are not allocating sufficient resources to the marketing item, which can be seen in the values indicated as advertising expenditure in tax returns to income, in which this declared budget line represents - on average - 0.54% with respect to operational revenues; an aspect that requires an analysis in later research.

The present research does not analyze the cause of advertising spending levels of each economic sector of the medium-sized companies, so it is advisable to carry out a study in the future of medium-sized companies from explicit sectors of the different regions of the country, in order to analyze its variation of investment in advertising and whether it has an effect on sales, even being able to design a more complete pattern with other independent variables. In addition, with the current tax reforms in Ecuador on the processes of deduction of advertising spending, another study in the future could be the analysis of the impact of this deduction on the decision-making processes of medium and large companies in this matter.

6. References

- AMA (2013). *Definición de Marketing*. Recuperado el 16 de Julio de 2016, de <https://www.ama.org>
- Armstrong, G., & Kotler, P. (2013). *Fundamentos del Marketing*. México: Pearson Educación de México.
- Clow, K. E., & Baack, D. (2010). *Publicidad, Promoción y Comunicación Integral en Marketing (4ª Ed)*. México: Pearson Educación.
- Dominguez-Doncel, A., & Muñoz-Vera, G. (2010). *Métricas del Marketing (2ª Ed)*. Madrid: Esic Editorial.
- Garza-Castaño, R. (2000). Creación de PYMES: Objetivo emprendedor. *Ingenierías*, 54-58.
- Gujarati, D. N., & Porter, D. (2010). *Econometría (5ª Ed)*. México: McGraw-Hill/ Interamericana Editores.
- Hernández-Sampieri, Fernández & Baptista (2006), *Metodología de la Investigación (4ª Ed)*. México: Pearson Education.
- Kelmansky, D. M. (2009). *Estadística para Todos*. Buenos Aires: Ministerio de Educación-Instituto Nacional de Educación Tecnológica.
- Kotler, P. (2001). *Dirección de Mercadotecnia, Análisis, Planeación, Implementación Y Control (8ª. Ed)*. Lima: Pearson Educación.
- Monferrer, D. (2013). *Fundamentos de Marketing*. Castellón de la Plana: Unión de Editoriales Universitarias Españolas.
- Rojas, V. (2016). Efecto financiero de la inversión de Publicidad en los resultados de las Medianas empresas de Guayaquil
- Sellamen-Garzón, A., & Arce-Meza, A. (2010). Las Decisiones Publicitarias dependen de las ventas en los Productos. *Criterio Libre*, 8(12), 143-161.
- Talaya, A. E., García-De-Madariaga-Miranda, J., Narros-González, M. J., Olarte.Pascual, C., Reinares-Lara, E. M., & Saco-Vázquez, M. (2008). *Principios de Marketing (3ª Ed)*. Madrid: Esic Editorial.
- Tellis, G. J., & Redondo, I. (2002). *Estrategias de Promoción y Publicidad*. Madrid: Pearson Education.