

RESEARCH ARTICLE

The Effects of Advertising on Profitability of Industries in Iran (A case study of Cosmetics and Hygiene Products Stores)

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Manuscript Details	ABSTRACT
<p>Received : 03.07.2015 Revised :23.09.2015 Accepted: 26.03.2016 Published: 10.05.2016</p> <p>ISSN: 2322-0015</p> <p>Editor: Dr. Arvind Chavhan</p> <p>Cite this article as: Farshid Ghorbani, Reza Yousefi Hajiabadi &Mansoir Zaranezhad. The Effects of Advertising on Profitability of Industries in Iran (A case study of Cosmetics and Hygiene Products Stores). <i>Int. Res. Journal of Science & Engineering</i>, 2016, 4(1):1-8.</p> <p>Copyright: © Author(s), This is an open access article under the terms of the Creative Commons Attribution Non-Commercial No Derivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.</p>	<p>Higher sales and profits are among main goals of every business. There are different ways to accomplish such goals such as advertising. Advertisinghas not only a positive effect on profitability, but it can also transform a luxury product into a necessity; therefore, the more advertising there is and the more complementary information accompany a product, the more rational and permanent this transformation would be. This study was carried out using Autoregressive Distributed Lag model with the aim of analyzing the effects of advertising intensity on profitability in cosmetics and hygiene products stores. Our data was based on seasonal figures of 1375-1386(Hijri) and the results showed a significant positive relationship between intensity of advertising and profitability of the mentioned businesses. The same relationship was also present between concentration ratio and profitability.</p> <p>Keywords: advertising, profitability, market concentration level, autoregressive distributed lag modeling.</p> <p>INTRODUCTION</p> <p>In order to maximize their profit, manufacturers advertise their products. According to behaviorism school of thought, behavior patterns of the firms play an important role in the market performance. Therefore, the structure has no or little effect on the market performance whereas firms' behavior is an essential and determining element. Based on the behaviorism views, mere concentrated structure does not necessarily lead to monopoly of the firms toward each other. It means that collusion leads to monopoly and absence of that creates competitive performance. Advertising – as a behavioral aspect of the market – can replace or complement various sales-promoting measures.</p>

Advertising and sales-promotion costs cannot be described within the framework of perfect competition. The firms whose customers already know about their products and quality, would never be willing to spend on advertising. Advertising would only be effective when the customers lack comprehensive information about products. Chamberlin defines advertising as a factor which affects demand following a change in needs and/or tastes. Schmalen see puts advertising as different ways to introduce ideas, demands and services of a firm. According to Shepherd, advertising is a means to develop customer loyalty toward a particular brand or product. Scitvesky views advertising as a factor that increases profit and decreases price competition among firms. Advertising enjoys a substantial effect on customer awareness and influences their thoughts, feelings, attitudes and decisions (Dehghani and Shahikitash, 1386). Advertising is important not only as a means of communication and competition, but also a means through which customers find out about companies' innovations (Tellis, 2004). Given the importance of advertising in sales and profitability, this study focuses on its effects on firms' sales and profits. The relationship between profitability, as performance variable and advertising costs, as behavior variables of the market has been a subject of controversy among economists and different economic schools of thought (Falahi and Dehghani, 1389). On the other hand, several empirical studies emphasize the need to investigate this subject in Iranian industries. The current study is carried out in the field of cosmetics and hygiene products industry in Iran and seeks answers for the question, whether advertising affects profitability of cosmetics and hygiene products industry.

This study is organized in five parts: part two is dedicated to literature review where we attend to theoretical principles and empirical background of the field. The third part of the article covers the methodology and deals with the model and analytical method that was used. Empirical results are presented in part four and the last part contains conclusion and suggestions for further studies.

1. Literature review

1.1 Theoretical principles

Meriam-Webster dictionary defines advertising as "something (such as a short film or a written notice) that is shown or presented to the public to help sell a product or to make an announcement." Advertising consists of connection and impersonal introduction of products or services through different carriers in exchange for

money in favor of profit/nonprofit organization or persons mentioned in the message (Roustaet.al, 1387). Bakhtaie, in a similar definition, defines advertising as connection and impersonal introduction of products or services through different carriers in exchange for money in favor of profit/nonprofit organizations that is done in order to achieve a specific goal and persuade or convince people (Bakhtaie, 1385). The ultimate goal of commercial advertising, obviously, is to boost and enhance commercial activities which brings to mind trading or trying to create a market for a product. Generally speaking, commercial advertising is a product of capitalism era with its emphasis on consuming a product or a service. Commercial advertising is mostly affected by communication sciences; however, it is occasionally related to sociology, psychology, economics and management (Asadi-tari, 1372).

Advertising originates from literal and intellectual life of human beings, and is an inseparable part of their lives. Despite the revolution in communication and broadcasting technology, the principles of advertising have remained intact to the extent that promotion of religious beliefs and inviting people into the circle of a religion has taken a different form. Considering the relationship between advertising and profitability, we can say that in an attempt to maximize their profit, firms would invest in advertising to the extent that expected advertising costs are equal to the expected profit. In case the advertiser is banned, firms can try other ways to reach the customers. Since firms prefer advertising over other customer relationship measures, it can be said that advertising is cheaper than other means of customer relationship. The differences between advertising costs in different industries clarify the different nature of goods and properties of the markets. One assumption is that there is a strong correlation between the type of goods and advertising costs in a way that compared to capital goods, consumer goods have higher advertising costs. Advertising consumer goods makes more sense because it covers a larger range of recipients. Market of consumer goods is geographically larger and more scattered. Capital goods, on the other hand have a limited number of buyers who need information beyond what advertising can offer. Basically, capital goods buyers are seldom affected by advertising and rather engage in direct negotiations with providers in order to obtain information about quality and properties of the goods (Khodadad kasha, 1389). According to Peter Drucker, the ultimate goal of marketing is to maximize sales. The goal is to help customers know and understand in a way that goods

and services sell themselves appropriately. By affecting market concentration ratio, advertising can create monopoly or competition. It can also affect prices through price elasticity of demand. Advertising is capable of changing barriers to market entry which in turn can lead to increased profitability and market share (Azizi & Moghadasi, 1390).

Scholar suggests two theories on advertising effects. According to his first theory, advertising is a product differentiation factor i.e. it can increase profits and decrease consumer welfare through product differentiation. This differentiation seems to be exclusive to imperfect competition markets. The second theory focuses on informative advertising. Based on this theory, advertising leads to a more competitive market where consumers have access to more information. Such a market atmosphere can negatively affect profit (Neokosmidim, 2005).

According to Porter (1974), there are two categories of goods: nondurable and durable. The first category, nondurable goods, are characterized by lower price and higher number of successive purchases e.g. matches or tooth brushes; however, the second-category goods enjoy higher prices and lower number of successive purchases. Porter argues that advertising can affect sales within the first category whereas such effects are considered to be minimum on durable goods. Durable consumer goods are usually sophisticated goods whose prices are higher than nondurable goods. Misjudging characteristics of a durable product and purchasing thereof could significantly affect consumer welfare. Therefore consumers need more information than usual, concerning this particular type of goods. In fact, the more sophisticated a product is, consumers would use more information resources like mediato obtain information (Khodadad-kashi, 1389).

Consumers tend to look for more information on durable products rather than nondurable ones. Advertising can barely affect durable goods sales. Price competition might be a better way to promote durable goods sales (Keon, 1989). In his study, Keon concluded that median of the advertising/sales ratio for nondurable goods equals 81.3 whereas for durable goods it is as low as 5.18 (Khodadad-kashi, 1389). Keon et al. also found evidence of low advertising intensity for high-price products. According to Nelson (1989), *search goods* are those consumer goods, whose quality is effectively measurable prior to purchase (like books and CDs). *Experience goods*, on the other hand, are products whose quality is only measurable after purchase (like automobile repair services, shampoo

and photography films). In case of search goods, advertising informs consumers about particular characteristics of the product; however for the experience goods, the goal is to remind consumer of the existence of such products and services. Since advertising is the only way to promote such goods, their advertising costs are presumably high. Davis et al. (1991) provide evidence of this assumption. In their study of 300 products in Britain, they concluded that advertising intensity for search goods is %0.4 whereas this values rises to %4 for experience goods.

As a behavioral aspect of the market, advertising can replace or complement various sales promotion measures. Advertising and sales promotion costs cannot be described within the framework of perfect competition. The firms whose customers already know about their products and quality, would never be willing to spend on advertising. Advertising would only be effective when customers lack comprehensive information about products. Level and intensity of advertising varies in different markets. Attempting to analyze such differences, some behaviorist economists focus on structural differences in markets and believe that advertising costs can be found within such differences. If we take concentration as an index of structure, the relationship between structure and advertising can be defined based on the relation of concentration and advertising. Cable (1972) believes that there is a second-degree relationship between advertising and level of concentration. This relationship is known as *inverted U theory*. Firms can take various measures in order to maximize their market share. These measures are divided into price and non-price competition categories. Advertising falls into the second category, non-price competition. Taking these measures depends on internal, external and environmental conditions of the firm. Some economists believe that in an oligopolistic market, advertising is more effective on sales promotion than price competition.

Since the level of concentration in an oligopolistic market is higher than a competitive counterpart and lower than a perfect monopolistic one, there is an inverted U relation between concentration and advertising. Therefore the more oligopolistic a market is, the higher advertising intensity it would have and vice versa. The reason for lower advertising intensity in a perfect monopoly is clear: monopolist has monopolized the whole market and sees no reason to promote its market share. Their advertising is limited to notifications and product introductions only (Khodadad-kashi, 1389). Any price change by a firm in an oligopoly is immediately recognized by competitors

and might cause a price war which eventually cuts profit margins of all enterprises. However changing advertising costs would not face immediate reaction of competitors since they do not find it as an immediate threat to their market share. Any reaction to a change of advertising costs of a competitor, requires a significant time span to yield. Thus the advertising intensity is expected to be high in an oligopolistic market. Moreover, profit margin is expected to improve following an increase in concentration. Later on, the firm would advertise to acquire higher shares and dominate the market. Therefore, the highest level of advertising takes place in an oligopolistic market; however, following an increased concentration when firms figure out their interdependencies, they would give up advertising war (Khodadad-kashi, 1389). According to Sutton, medium-concentrated enterprises can enjoy economies of scale; therefore, advertising intensity is expected to be higher in medium-concentrated firms compared to firms with high or low concentration (Sutton, 1974). In most empirical studies, concentration level, product variation and barriers to entry are considered as structural variables, but market performance is reflected in efficiency, technical development, profitability ratio, production and employment rates. Aspects of behavioral variables are reflected in research and development and advertising. Market concentration level could be calculated by various indexes: N Firm Concentration Ratio, Inverted index of N firms, Herfindhal-Hirshman Index, Hannah-Kay Index and Entropy Index (Khodadad-kashi, 1385, p.99). There are different ideas concerning triple elements of the market. These ideas fall into the framework of the relationship between structural, conduct and performance elements of the market (SCP). However, how these elements are related has long been a subject of controversy among economics schools of thought. Early studies on the triple market elements were conducted by followers of structuralism (Harvard). Mason (1939) was the first to investigate this issue using a descriptive model. Among the triple market elements he emphasizes structure. Introducing the concept of barriers to entry and their effect on conduct and economic performance based on neoclassical model, Bain (1959) confirms the importance of market structure. According to structuralist economists, causal direction of the elements is as follows: *Structure* → *Conduct* → *Performance*. In fact, firm conduct and the decision on collusion or competition is affected by market structure. Structure and conduct of the market participants form market performance and eventually the performance of the whole market and industry. These economists believed that high concentration in a

market being dominated by a limited number of sellers, provides a good condition for collusion with the top firms being more willing to cooperate.

Another school of thought, Chicago-U.C.L.A, presents opposing ideas than those of structuralists. It was founded in 1950s and risen to fame by people like Stigler, Demsteez, McGee, and Posner in 1970s. Chicago proponents believed in a causal direction from performance to structure and then conduct ($P \rightarrow S \rightarrow C$). According to them, monopoly is a result of superior performance. By lower costs and reduced prices, top firms make their competitors go out of business and simply increase barriers to market entry. Firms and companies who manage to reduce their costs and utilize economies of scale, gain superiority and monopoly over the others. Efficient enterprises enjoy a higher rate of profit due to their lower costs; considering their financial resources, they engage in R&D activities and acquire a higher market share through novel production methods. Due to their low costs, these firms are able to offer so low prices that many of other potential enterprises fail to compete. This situation raises the barriers to enter such a market even higher. Accordingly, the causal direction would be from performance to structure. These economists also believe that social costs of monopoly are compensated with monopoly profits and exercising monopoly power is only possible through collusion. However, this market power fades soon because parties in collusion constantly try to trick each other and escape the current agreements.

Behaviorism, on the other hand, takes behavioral patterns of the firms as the effective factor in market performance. Accordingly, structure has little or no role in performance, which makes firms' conduct the essential element of performance. According to behaviorism school of thought, mere existence of a concentrated structure does not guarantee monopoly; however, monopoly depends on the interactions between market participants (firms). Thus, if collusion leads to monopoly, lack of collusion results in competition. Firm's decisions in order to enhance quality or change a product, engaging in R&D activities and implementing sales promoting policies, like advertising, are considered as different behavioral aspects of the firms (Khodadad-kashi, 1385, p.17).

1.2 Background of the study

Theories of industrial economics have had different applications in economic sectors during the recent years. There have been numerous studies in this field, among which Leone (1995), Ericson et al. (1992), and

Aaker & Keller (2007) have demonstrated the positive effect of advertising on sales and profitability. According to Aaker and Keller, advertising brings brand equity for a firm which leads to higher sales and profitability. Kim (2007) studied the effects of marketing on the reputation and revenue of top American firms which were listed in Fortune magazine; 12 firms out of his sample of 18, presented a significant positive relation between advertising costs and reputation. 14 cases also showed a positive relation between advertising costs and revenue. 5 firms reportedly had a meaningful relation between public relations and advertising costs. Advertising costs and revenue were positively related in 4 firms of the sample. In another study, Kundu (2008) investigated the effect of advertising on profitability (Tobin's Q ratio) and firm value among 172 Indian firms. He concluded that there is a meaningful positive relationship between advertising costs and firm's profitability; however, this relationship is rather estimated to be of low intensity. According to this study -compared to other industries- financial and bank services enjoy a higher effect of advertising on profitability. It is worth mentioning that no significant relationship was found between advertising and firm value. A number of studies were also done on Iranian industries: Azizi and Moghadasi (1390) investigated the effect of advertising intensity on performance in automotive and food industries. Their sample consisted of the annual data of 25 firms (17 food and 8 automotive industries) in Tehran stock market which were extracted from balance sheets and statements (1377-1387). They used unbalanced panel data with a total number of 211 observations. In their study, they investigated the relationship between advertising intensity and three indexes of financial performance, namely return on assets, profit margin, and sales growth. The results showed a meaningful positive relationship between advertising and profit margins in food industries. In the case of automotive industries, advertising intensity was positively related to return on assets, profit margin and sales growth. The combined results of the study confirms that advertising intensity has a meaningful positive effect on performance and profitability of the firms, with automotive firms enjoying a more positive effect compared to food industries. In another work, Khodadad-kashi et al (1391) studied the mutual effects among market structure, innovation and R&D of Iranian factories (1375-1386). They applied simultaneous equations system and two-step least squares method on the combined data obtained from Iranian factories. They concluded that concentration level has significant effects on the level of innovation and R&D among

Iranian factories. They also found an inverted U relationship between concentration level and R&D measures. According to estimation results of advertising equation, increasing market concentration lowers advertising levels, whereas innovative behavior increases advertising levels of the firms. On the other hand, higher profitability caused reductions in R&D measures and level of innovation had no effect on the structure; however, profitability and advertising had a direct effect on concentration level.

2. MODEL AND METHODOLOGY

According to various schools of thought, elements of market are connected. There have been different studies on concurrency among structural, behavioral and performance elements of the market. Recent studies in the field of industrial economics, utilize different models and methods. These methods include *Vector Autoregressive Model*, *Vector Error Correction Model* and evaluation of immediate shock effects on other elements within the framework of impulse-response functions and determining long-term co integrations of the elements. There are three types of variables in simultaneous equations system, namely endogenous, exogenous and predetermined variables. According to Sims (1980), if there is a real concurrency among some variables, this concurrency must be considered the same for all variables and there should not be any difference between endogenous and exogenous variable what so ever (Noferesti, 1387, p.109). Due to concurrency among structural, behavioral and performance variables, they can all be viewed as same and it would not be right to judge them as endogenous or exogenous variables. Market elements are dependent on self-delayed values, other variables and random elements.

Practically speaking, there can be $k-1$ co-integration vectors for k variables in a pattern. Long-term relationship among structural, behavioral and performance variables of the market can be examined by *VAR* or *VECM* models. Impulse response function, in this case, represents the reaction of a market element to shocks caused by other structural, behavioral and performance elements through the course of time. The share of each element can also be determined by variance decomposition. Accordingly, in order to assess the interrelationship among structural, behavioral and performance elements of the market, seasonal data figures of Iranian cosmetics and hygiene products stores during 1375-1386 is as follows:

$$\begin{bmatrix} ADV_{1t} \\ P_{2t} \\ H_{3t} \end{bmatrix} = \begin{bmatrix} \beta_{10} \\ \beta_{20} \\ \beta_{30} \end{bmatrix} + \begin{bmatrix} \beta_{11} & \beta_{12} & \beta_{13} \\ \beta_{21} & \beta_{22} & \beta_{23} \\ \beta_{31} & \beta_{32} & \beta_{33} \end{bmatrix} \begin{bmatrix} ADV_{1t-1} \\ P_{2t-1} \\ H_{3t-1} \end{bmatrix} + \begin{bmatrix} e_{1t} \\ e_{2t} \\ e_{3t} \end{bmatrix}$$

Where ‘ADV’ stands for advertising and indicates all advertising costs. ‘P’ represents profitability level which indicates profitability/sales ratio. ‘H’ is concentration level which is measured by Herfindahl-Hirschman index (HHI) – the sum of the squares of the market shares of all the firms.

$$H = \sum_{i=1}^N \left(\frac{X_i}{X}\right)^2$$

In the result of this index, each firm’s market share is weighted by its own market. Therefore, larger firms are given more weight giving them a superior position in the ‘HHI’ structure. A time series variable is considered to be stationary if its average, variance and autocorrelation coefficients remain constant over time. Although random shocks might affect a stationary variable for a short time, this effect has no effect over time; therefore, any strategy to alter such variables would be ineffective. There are various tests to check stationarity or non-stationarity, among which *Dicky Fuller Test (DF)* and *Augment Dicky-Fuller (ADF)* are the most common in grading non-stationarity of the series. In a time series analysis, Null hypothesis (H₀) states that the series does not have a unit root and is thus stationary. Alternative hypothesis (H₁) on the other hand implies that the series has a unit root and is therefore non-stationary. If critical values are smaller

than absolute statistic, the series is stationary. Firstly, we apply *ADF* test to test stationarity. We used ‘Eviews8’ to check unit root and stationarity of the intended variables which are listed in table (1-3).

3. EMPIRICAL RESULTS ANALYSIS

In order to estimate vector auto regressive pattern (VAR), first we need to determine the optimal lag (interval) number. Various data criteria including Final Prediction Error, The Likelihood Ratio, AIC, Schwartz.-Baizain and Hanan-Quinn are utilized. The optimum lag number in the current study – as you can see in table (1-4) - is 2 (appendix B).

Impulse response functions provide useful means to learn about interactions among variables of dynamic patterns. These functions represent the system’s dynamic route in response to random shocks in amount of a standard deviation. In other words, these functions represent direction, stationarity, and responses of the endogenous variable of the system to random error shocks. IRFs separate endogenous variable components in response to shocks and then determine the effect of shifting shock level in amount of an SD on current and future endogenous variables. In the current study, IRFs can account for the effect of one standard deviation change in advertising intensity on concentration ratio and profitability. The diagrams bellow reflects the response of advertising variable to random shocks. Figure (1-4) shows diagrams of impulse functions representing variables interactions.

Table (3-1): Unit root test results

result	level of significance	critical value	test statistic	trend	intercept	variable
stationary	%5	-2.93	-0.54	n/a	present	ADV
stationary	%5	-2.93	-1.25	n/a	present	P
stationary	%5	-2.93	-4.07	n/a	present	H

Considering the unit root test, it can be stated that the variables with source width being studied are stationary (appendix A)

Table (4-1): Determining the optimum lag interval

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-490.1756	NA	1091939.	22.41707	22.53872	22.46219
1	-349.3888	255.9761	2737.064	16.42676	16.91336	16.60722
2	-305.2353	74.25809*	557.4786*	14.82888*	15.68042*	15.14467*
3	-298.4740	10.44936	627.1825	14.93063	16.14713	15.38177
4	-290.6151	11.07386	680.8471	14.98250	16.56394	15.56898

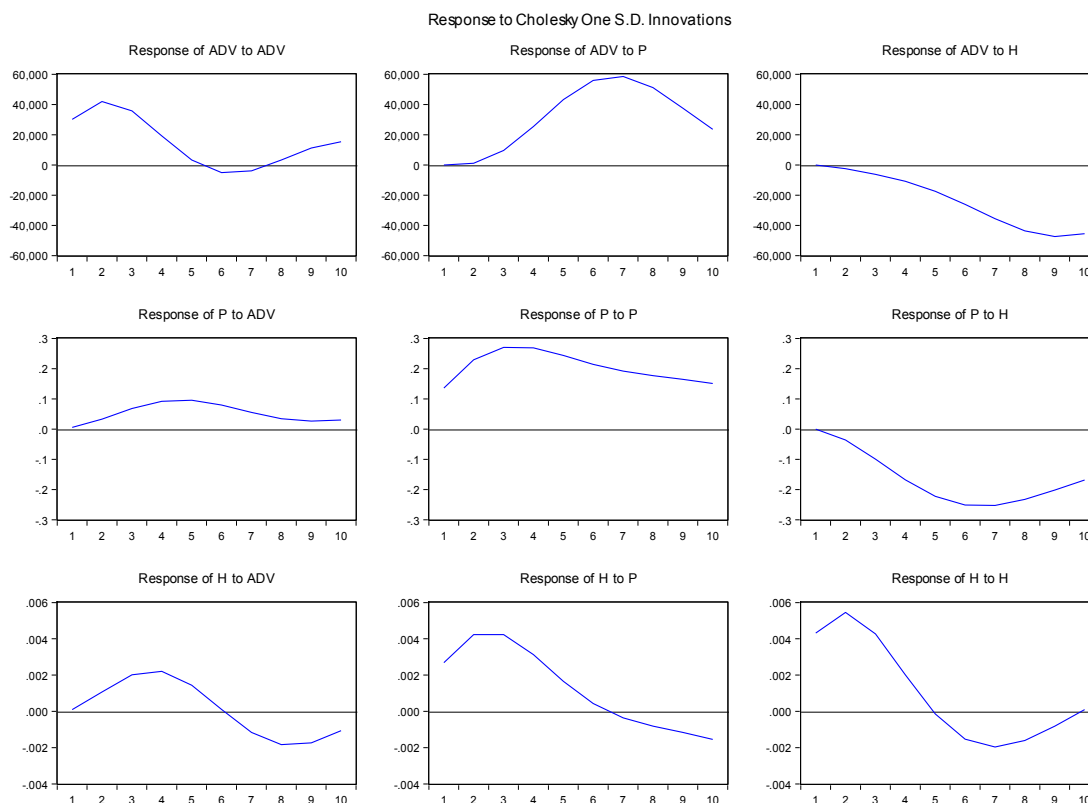


Figure (1-4): Impulse response diagrams

Table (4-2): Model estimation chart

Vector Autoregression Estimates			
Sample (adjusted): 1375Q3 1386Q4			
	ADV	P	H
R-squared	0.973350	0.981470	0.834025
Adj. R-squared	0.969250	0.978619	0.808490

Table (4-3): Variance analysis results

10 periods	caused by ADV variation	caused by P variation	caused by H variation
ADV variation (%)	17.48	50.62	31.89
P variation (%)	4.33	53.90	41.75
H variation (%)	13.01	37.33	49.64

According to the Fig. 1-4, it can be concluded that a positive shock on advertising has a positive effect on profitability and concentration variables.

According to table (2-4), the standard deviation is 0.97, which is moderated to 0.96. It means that %96 of changes in the studied variables are explained through that particular variable which provides a high explanatory power to the model (Appendix C).

In case of a shock imposed on a dependent variable, it will be possible to determine the share of the variable itself and that of other variables i.e. what percentage of

variation was caused by the variable and what percentage was caused by other variables being modified. To this end, variance analysis is commonly used the results of which are listed in table (3-4). (Appendix D):

Advertising variable (ADV):

After 10 periods, %17.48 of the variation was caused by the variable itself, whereas profitability and concentration variable respectively caused 50.62 and 31.89 percent variations.

Profitability variable (P):

After 10 periods, %53.90 of the variation was caused by the variable itself, %4.33 by advertising and concentration variable is responsible for %41.75 of the variations.

Concentration level (H):

After 10 periods, %49.64 of the variations were self-cause. Profitability and advertising respectively caused %37.33 and %13.01 variations.

4. CONCLUSION AND SUGGESTIONS

This study was carried out in order to evaluate the effects of advertising on profitability in cosmetics and hygiene products industries. The results of the study suggest that advertising has a positive effect on profitability. Higher sales and profitability are among main goals of every business. There are different ways to accomplish such goals such as advertising. Advertising has not only a positive effect on profitability, but it can also transform a luxury product into a necessity; therefore, the more advertising there is and the more complementary information accompany a product, the more rational and permanent this transformation would be. Given the positive effect of concentration level on profitability, it is safe to say that higher concentration levels improve profitability in the above said industries. Based on our findings, we can put forward a number of suggestions in order to improve sales in cosmetics and hygiene products industries:

1. Considering the positive effect of advertising on profitability, economic authorities are expected to formulate advertising regulations in order to improve advertising quality and provide more information for the customers.
2. Since advertising in cosmetics and hygiene products industries is not as valued as it should, this market has room for more extensive advertising activities in a way that brings higher profitability to the manufacturers.
3. Marketing managers in these industries can and should transfer marketing ideas to other management levels in a way that they see advertising as an important factor of improving brand recognition and equity and also firm value.

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