

DYNAMICS ANALYSIS OF CONSUMER BEHAVIOR

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Abstract

The behavior of consumers are continuously affected by different factors and changed. Foods, especially the dairy products and ice cream are among the products that many consumers are dealing with them every day. In relation with these products, many dynamics can be observed in the behavior of consumers. Extracting factors affecting the behavior of ice cream consumers and assessing them using the statistical experts' community, this study tries to investigate the importance of relationships between these factors using a survey. Offering these relationships in a form of cause and effect relationships, a dynamic model for the behavior of consumers was developed. Finally we used this dynamic model to evaluate the factors affecting the ice cream promotion methods and its effect on brands. The results showed that key characteristics of the product such as having standard, taste, brand reputation, quality, type of packaging, etc. and identify the characteristics that have the greatest impact on consumer behavior, are very effective to make decision and adopt strategies marketing.

Keywords: behavior of consumer, dynamic systems, cause and effect relationship, marketing

INTRODUCTION

Consumer behavior is a multi-faceted knowledge and a new system has greatly influenced the assumptions developed in the scientific systems. Investigation of relationship between consumer behavior and various sciences such as psychology, sociology, social psychology, cultural anthropology, economics, is considered as important issue in macro studies (R. Chu ,2002). For example, the relationship between consumer behavior and psychology knowledge investigates the persons and personal characteristics, such as motivation, habits, ideals and, all these factors are important in understanding consumer behavior (Kotler, 2000).

Stringent Purchases are in contrast to the low price purchase, or at least stringent Purchases. When people want to use accumulated surplus funds to purchase goods such as a TV or a car, or they are willing to travel for the holidays, so making their own decisions are not easy. For most consumers, the decision making is difficult. Before making any decision, the customer actively collect the necessary information, talk with his friends, and do basically anything that can do for shopping (Babaei, M, Ali ,1999).At least four factors can be the source of the conflict: the person, importance of the topic or product, design of media or messages. Some of these factors lead to sustained involvement and some provide situational involvement circumstances (D. Andrew, M. Mathews, Pressy, P. Brian ,2000).Many factors affect the level of consumer involvement, these factors include the following:

- Desired good
- Details of communication which is received by the consumer.
- Characteristics of a situation in which the consumer has activity.
- Consumer personality (J. Mowen, C.John, M. Minor, S. Michael , 2001).

In the operation level, consumer involvement is connection between the subject (stimulants) and responses of consumers, including thoughts, which during the show, or during exposure to media and advertising exposure, comes to customer's mind. In this case, what from the content of the stimuli (Advertising) are linked to a thing of the life of customer. For example, a person who intends to buy a new refrigerator (high Involvement), when confronted with a newspaper or television advertising in this connection may study carefully the relevant data (centered approach), if the information is credible and convincing is ongoing, a good attitude is created. However, if the data are weak and doubtful, negative attitude will create. In the other case, if the audience does not need new refrigerator (low involvement), there is not the need to think and analyzes relevant information, and it will be passing along the passage, unless the advertisement attract the audience attention (peripheral approach) (Babaei, M, Ali,1999). Based

on theories of Judith (Zaichkowsky, Judith Lynne ,1985), involvement can be studied in three different levels:

- Involvement with advertising

Justification of advertising

Effectiveness of advertising to encourage the purchase

- Involvement level with the product

The relative importance of product categories

Understanding the different characteristics of the product

Prefer a specific brand

- Involvement level in the purchase decision

The collection amount of data

Time taken to evaluate options

The decision was taken to the selection

Research perspectives on consumer behavior

One of the key features of the requirements of consumer behavior is its research database. This field as one of the branches of social sciences benefits from research methods and procedures of each of behavioral sciences. Research performed in this field can be divided into three categories (J. Mowen, C. John, M. Minor, S. Michael, 2001).

Decision Making Perspective

During the 1970s and early 1980s, researchers focused on deciders on this theory that consumers are rational decision makers. According to the view of making decision for the purchase, can conclude that consumers first understood a problem, and during procedures, they try to solve their problem as logical. These steps include problem identification, research, evaluation after choosing, and assessment after the acquisition. This approach has roots in cognitive psychology and economics.

□ Experimental Viewpoint

This view, from this perspective, examines how consumer purchases, as consumers, in some cases, on the basis of decisions do not buy entirely rational, but they are just for fun, imagine, emotions and feelings, attempt to purchase goods and services. Purchases which are to be classified in the experimental point of view are purchases without planning. Seeking diversity occurs when consumers change products sequentially, to reduce the uniformity of the products

in the past and create irritation. The roots of experimental point in the psychology of motivation can be found in the fields of sociology and anthropology.

□ **Behavioral effect Viewpoint**

This view suggests that, Strong environmental forces direct consumer toward that, without feelings or beliefs prefabricated, buys a product. At this point, the consumer through a rational process does not apply to purchases and is based on feelings. Instead, his purchase is affected by a direct effect of environmental forces such as sales promotion tools, cultural norms, physical or economic pressures. As can be seen, most purchases have elements of each of these three perspectives discussed. Research that has been done in the field of consumer behavior, in part of external effective factors of a product, Mofidi (2009), investigated the effect of the characteristics of detergents on consumer behavior. In this study, the characteristics such as advertising, packaging, signage standards, their effectiveness, accessibility, consumer behavior are very effective and important. Karimi (2008), analyzed the influencing factors of customer loyalty to brands in the Edible products. Lu Ting Pong and Tang puiyee (2001) for Edible products express effective parameters on consumer behavior in terms of five main characteristics. These features are as follows: the reputation of the trade mark, being standard, the type of packaging, taste and availability. Aghaei evaluated (2010) Technical and physical characteristics of dairy products in terms of consumers in Tehran. In this study, the factors influencing the purchasing decisions of consumers in northern Tehran were as follows: advertising, advice and introduce others, of the commercial brands, packaging, distribution pattern, a habit, a new product, product quality and easy access. Variables such as prices and its unexpected increase evoke the memory and compare the prices of different brands on the selection and purchasing decisions of consumers of dairy products in Tehran and against the notion, it is not considered as a basic standard. Safaeian identified factors associated with purchasing decisions of consumers in the choice of Edible products. In this research, advertising agents, habits and product diversity were recognized as the factors that have no impact on the purchasing decisions of consumers to buy food. The factors of quality, the national standard, ISO certification, price, product presentation, customer loyalty, packaging, people, reputation, brand and business back on purchasing decisions and perceptions of food products were identified as factors that are important to customers. In the meantime, the most effective factor is quality, and being new in the total sample as the lowest effective factor were identified (Safaeian, Mitra,2000).

Erfanian examined factors affecting the demand for milk and dairy products in Iran by using the econometric analysis and fixed parameter method. He achieved the following results

(Erfanian, Zohreh, 2007): The price of the products has a significant negative effect on demand. Stretching advertising, milk, yogurt, cheese and yoghurt, respectively, is 0.29, 0.12, and 0.3 and 0.23. With the increase in household income, consumption of all dairy products increases.

Tendro, Bermabe'u, in a research entitled the style of consumer preference for cheese, examined investigate factors affecting consumer preferences when buying cheese. The main source of information was interviews with ordinary purchasers of food, living in Albacete, Spain and which was collected in the months of October, November and December 2002, of 412 samples. The main result of this paper was the importance of price on customer preferences who by regularly or occasionally cheese (A. Tendero, A. Bernabe'u,2005).In investigation of the behavior of consumers of ice cream, according to their similarity and proximity to the dairy product, dairy major characteristic influence on consumer behavior is used. Since the condition of ice cream consumption is slightly different compared to dairy products, primarily investigation of the characteristics and their effects on each other with the help of experts will be discussed. After the above parameters, and other possible characteristics, and the final conclusion of the experts on this point, the general characteristics of the test will be discussed.

Dynamics System

Dynamic system is the demonstration of a top-down method or approach. This discusses internal processes of feedbacks, loops and delays that affect the entire system (J.D Sterman,2002).A flow diagram, including the stock variable (concentration of resources in the system), flow (rate of change which substitutes the resource), and information about the amount of impacts based on change in the corresponding stock variable. Changes in the stock and flow variables with different equations are described.

In the example, which is shown in Figure (1) and (2), the elements of a dynamic system diagrams can be seen. This example is a simple case of cause and effect diagrams and flow in advertising (C. Kirkwood, 1998, H. Min, et al,2005):

Since, typically, the first step in the design of dynamic systems is drawing cause and effect diagram, and considering the tension of the interactions between the components of the system, in this example can be seen, with increase of the power of potential customers, which is done by advertising, the sales increase, and on the opposite side, with increased sales, this power is declining. In this loop, gradually we can see shifting towards a specific goal. The increased sales also lead to increase real customers.

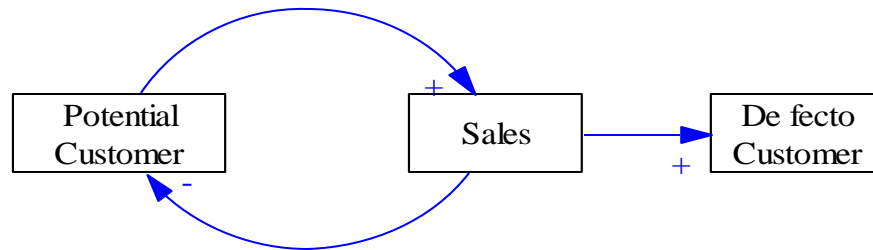


Figure 1: Diagram of cause and effect ads

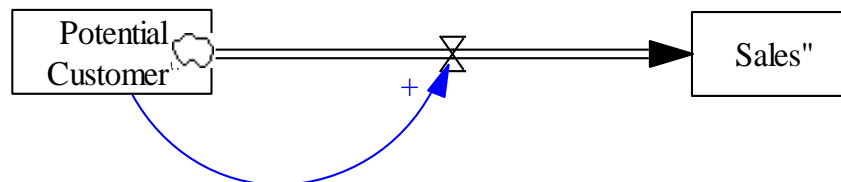


Figure 2: Diagram of the flow of advertising

Conceptual Model

The following model is according to research done on the behavior of consumers and dairy.

Table 1: Key factors affecting the behavior of consumers of food products

Research	Key factors
Safaeian, Mitra,2000 'Erfanian, Zohreh,2007 'A. Tendero, A. Bernabe'u,2005	Price
Mofidi, Yalda,2001 'Safaeian, Mitra,2000'	Quality
Safaeian, Mitra ,2000 'A. Tendero, A. Bernabe'u , 2005	Taste
Mofidi, Yalda,2001 'Hajkarimi, Abasali,. Jalalzadeh, Reza, 2008 'Safaeian, Mitra ,2000'L. T. Pong, T. P. Yee ,200 'B. Delgado, A. Munuera,2001	Easy access
R. Vaughn ,1986 'Safaeian, Mitra ,2000	Layout
Mofidi, Yalda,2001 'Safaeian, Mitra ,2000 'L. T. Pong, T. P. Yee ,200 'B. Delgado, A. Munuera,2001	Brand reputation
R. Vaughn ,1986 'Hakimara, Muhammad Ali ,2005 'Hajkarimi, Abasali,. Jalalzadeh, Reza ,2008 'Mofidi, Yalda,2001 'Erfanian, Zohreh ,2007	Advertising
Mofidi, Yalda,2001 'Hajkarimi, Abasali,. Jalalzadeh, Reza ,2008 'L. T. Pong, T. P. Yee ,200 'B. Delgado, A. Munuera,2001	Packing
Mofidi, Yalda,2001 'Hajkarimi, Abasali,. Jalalzadeh, Reza ,2008 'L. T. Pong, T. P. Yee ,200 'B. Delgado, A. Munuera,2001	Standard Certificate

METHODOLOGY

This study in terms of objective is an applied research. In fact, the aim of this study was to develop practical knowledge in a particular field. In this study, after study on consumers, and interviews ice cream, we try to collect information from consumers about the key characteristics related to ice cream, so, the important parameters influencing the consumers are investigated, and essential guidelines due to these characteristics in marketing are provided. Also, this study in terms of method is a descriptive-Survey study. In fact, the design of this study was to describe the phenomenon and their detection by generalizing the results from a small sample of the larger sample.

For the study, two questionnaires were used: The first questionnaire, in order to verify the characteristics of consumer behavior obtained from the literature review and expert opinion was designed. The purpose of this questionnaire is to assess compliance characteristics of consumer behavior, target other key characteristics that influence consumer behavior of the ice cream from the perspective of experts. Experts of the study were director of marketing and product managers of Kaleh ice cream. The second questionnaire, in order to collect the views of consumers and consumer behavior model equations was designed.

The questionnaire was completed by random determination of people who are buying ice cream, and were true according to the characteristics of the studied population. To calculate the total size of required sample of ice cream consumers from each food stores in Tehran, Cochran's formula was used (400). To analyze the data, the software Vensim PLE is used.

Cause and effect diagram

After creating the foundations of the model, with the help of experts, and develop relationships in consumer behavior, according to what was mentioned before, the chart of causal of consumer behavior model was developed. To complete the model, and providing the equations needed, we try to explore the effects of the characteristic features on other feature by using the second questionnaire (Appendix B).

In this section, due to the above key feature, and relations extracted from the literature in the previous step, cause and effect diagram of the research model was completed. Considering the totality of these relations in the three process of before shopping, during purchase, and after that for ice cream, this diagram in figure (3) is provided.

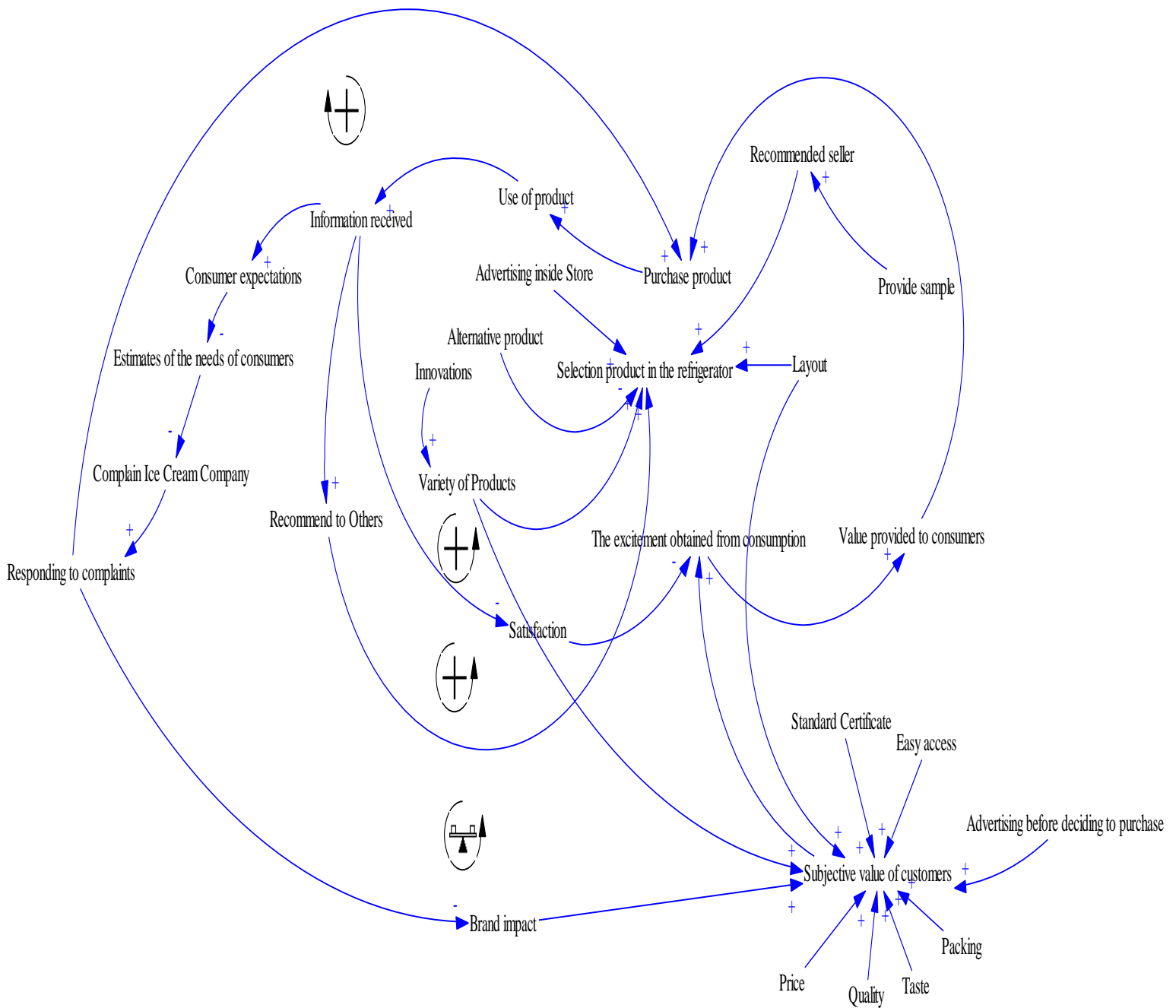


Figure (3): Graph of the results and their analysis

According to Cause and effect diagram, flow chart is as follows:

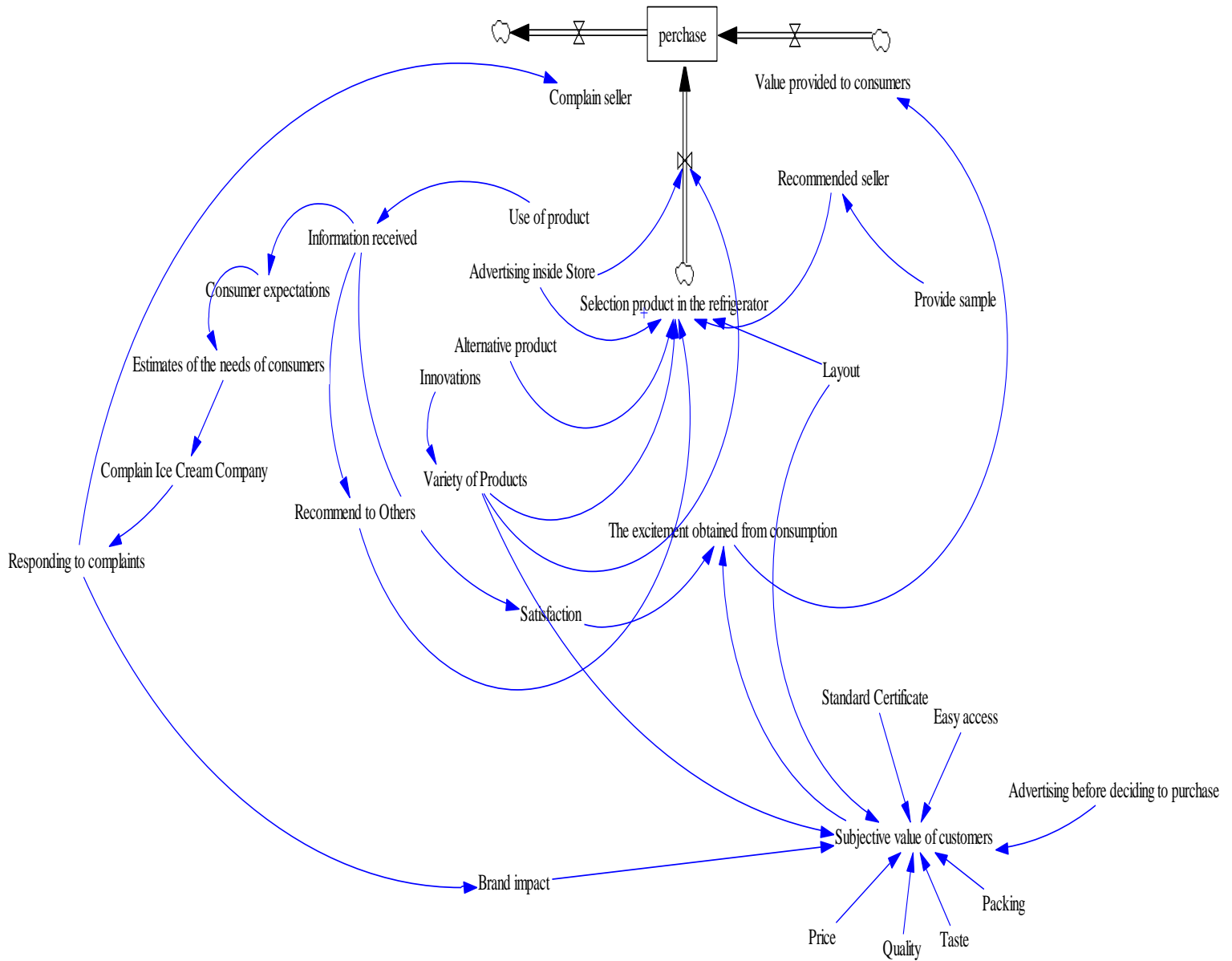


Figure 4: Flow Chart (Dynamics Model)

EMPIRICAL RESULTS

According to the expert opinion, among all the ice cream market issues, the issue of effect in the purchase, complaining of a brand, offer to others, and the level of consumer interest in ice cream consumption are very important. In this section, we investigate these issues and relevant are discussed.

The effect in buying of ice cream

In the simulation model of consumer behavior, due to the stability of key characteristic values of ice cream during simulation, buying ice cream by consumers will have growing graph. This indicates an increase in per capita consumption in the near future (Figure 5). What is important in this part for the ice cream marketing is deification of factors influencing the slope of this graph (ie, identify the factors that speeds up the buying ice cream by consumers), so in the first instance, with its help, the market share of ice cream among other products in developed, and in the next step, the company's market share compared to other competitors is increased.

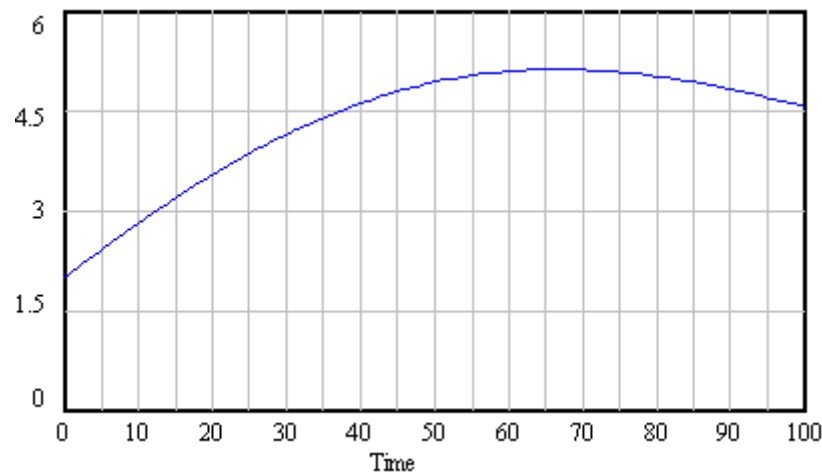


Figure 5: Buying ice cream

Customer complaints

However, competitors provide a similar or better product to a satisfied customer, potential customers tend to buy from the competition will be very high. But, attracted customers rarely pay attention to advertisers of other organizations. Therefore, investigation of complaints, and listening to consumers, play an important role to turn customers complained into attracted customers. The Figure 6 is an ice cream customer complaints diagram. The slope of this curve

is positive, but is not very high. Increase of customer response centers, and to prevent similar complaints are issues that may impact on customer complaint rate.

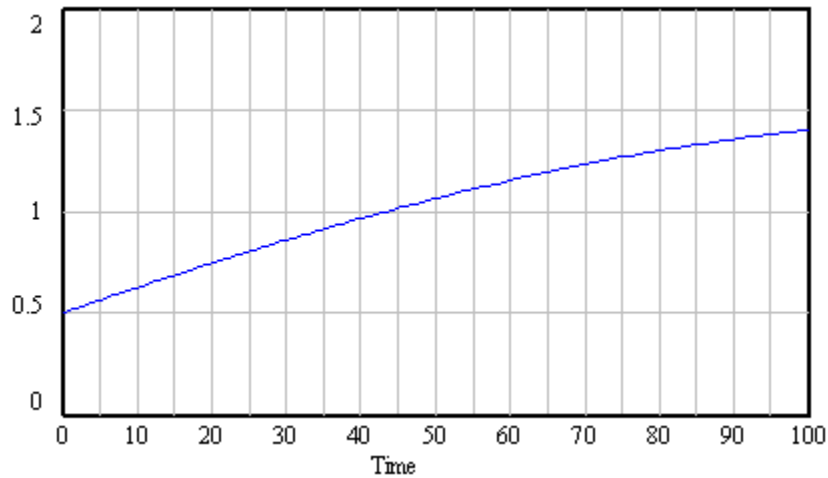


Figure 6: Customer complaints

Recommend to others

In the results of the model of consumer behavior, recommend to others in this product, despite the ascending behavior, is not important (Figure 7). Ice cream is considered as a cheap commodity, and with a high diversity, among other commodities, and this would be one of the reasons for fading recommend to others.

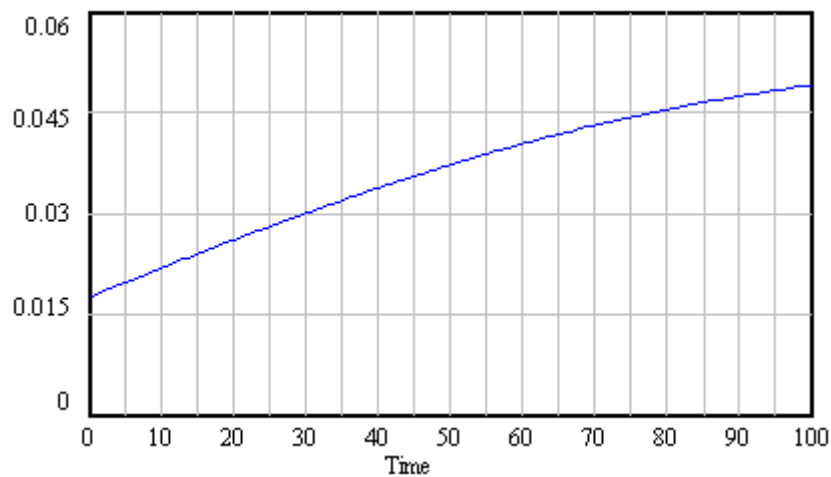


Figure 7: Recommend to others

According to information received by the consumer of ice cream

Similar to graph of suggest to others, considering information received by the use of the product during the consumption of ice cream, does not show significant importance. Consumer ice cream behavior, indicating the low importance of the information received about the use of the product, the value less than 1 (very poor) confirms this fact (Figure 8). In this model, it was observed that, following the consumer from the experience of others, as well as the accuracy inexpensive products details is more than the cheap products.

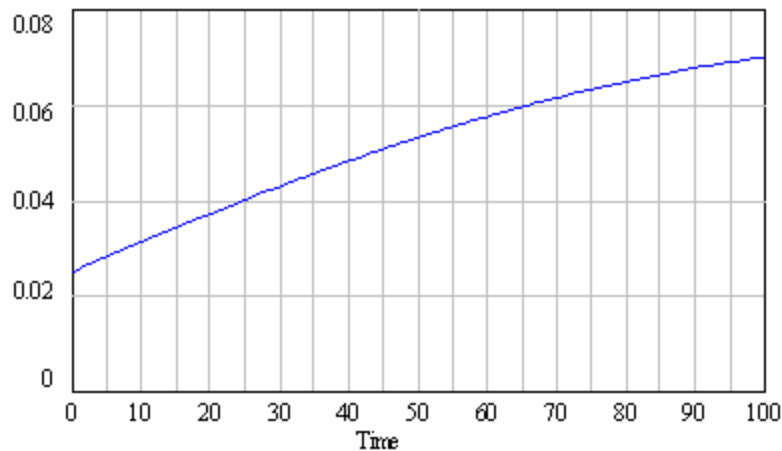


Figure 8: According to information received by the consumer of ice cream

CONCLUSION

Focus on the key characteristics of the product such as having standard, taste, brand reputation, quality, type of packaging, etc. and identify the characteristics that have the greatest impact on consumer behavior, are very effective to make decision and adopt strategies marketing. Studying of the behavior of this model for ice cream, in a season of the year, the effects caused by the purchase of ice cream, were evaluated, and factors affecting these characteristics were analyzed. In issue of easy access, investment on ice distribution systems, market scanning and detection of empty places to present ice cream and using capillary distribution in the field of diversification, providing new products, and increase the variety of ice cream on the market, as a policy for development and promoting Kaleh ice cream products, was presented to the marketing of this company. The output of the model, based on the Likert scale, and at intervals of five sections, and to help decide in the future, was provided to the marketing. In this study, with the help of Cause and effect relationships in consumer behavior, and also based on the sum of existing models of consumer behavior, dynamic development and dynamic

model of consumer behavior. This model with the simulation of the consumer behavior provides the possibility of identifying the critical parameters affecting the entire system. By identifying these factors, ice cream manufacturing companies are able to better identify themselves consumers. What is important in the development of this model is its implementation in other dairy products with little change.

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