

Evaluating the Importance of Factors Effecting the Consumer Behavior in new Dialysis Machine in Iran-Tehran

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Abstract

Background and Aim: The health care industry is very critical base on its relation to human life. The amount of research and changes in the diagnostic techniques and procedures, therapeutic techniques, drugs and equipment are very vast and fast. In order to prevent the waste of resources, it is required to understand the needs and wants of the market. Therefore, it is very crucial to understand the patient's opinion.

Methods: By reviewing the literature of consumer behavior theories, a number of factors are classified into seven categories. Based on this classification a questionnaire was developed. The main respondents were parents of a child who is suffering from renal failure. Then, two statistical tests were held using t-test in order to identify the importance and prioritizing of each factor also correlation coefficient to understand the availability and strength of relationship among factors.

Results: The results base on the statical tests indicates that the three groups of factors do not affect consumer behavior. The rest of the factors have an influence on consumer behavior regarding a new product.

Base on the result hospitals and clinics that have hemodialysis sections with the specialty of delivering service to children should recognize the product accuracy, the lowest possible price, with vast of informative activity to parents and the children and doctors.

Conclusion: These approaches will smooth the way for hospitals and clinics to launch new services to renal failure patients.

Keywords: Consumer behavior; Renal failure; Hemodialysis; Dialysis's equipment.

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Introduction

In the era of highly competitive market in national and international environment the companies that could not introduce new product into the market they will be at a very dangerous risk (1). There are a lot of firm that had a failure in introducing new product into the market (2). Woojung (3) believes that marketing has a very critical role in new product success and one of the important skills in this area is market behavior analysis. Most of managers have suspensions about the accuracy of new product analysis because of high uncertainly around it.

Although they are very pessimistic about the analysis but they still look for new methods (4).

Most of methods are categorized into two distinct group; qualitative and quantitative methods (5). The important part is not only the method is more the factor that is used in the measurement.

There are several researches in the area to compare the method usage in the process of new product development but the research in the field of affective factors are mostly localized because of different cultural context and environments (6).

Therefore, it is very important to introduce the factors that shape consumer behavior in a specific market (7). This research will be focused not on the method to analysis the behavior but emphasize the factors that influence the people behavior specially in the health care market with focusing on children who are suffering from renal failure.

According to the new research there is a new continuous renal replacement therapy machine which was created to overcome the problems of existing dialysis machines that are only designed for adults and have to be adapted for use in newborns and small infants (8). The machine is so expensive and tendency of bringing and installing the machine has been evaluated by the investors.

In this research the influencing factors that shape consumer behavior toward the new product, are recognized and tested. In the first step the factors are documented, and then they will be examined by data gathered and statistical tests. Forecasting market behavior and sale of new product is very critical in commercial success. Therefore, it is very important to identify the effecting factors to forecast consumer behavior. In the following section a different behavior theory will be reviewed. This model draws heavily on learning theory concepts (9), and six learning constructs. The process of learning serves to influence the extent to which the consumer considers future purchases, and seeks new information. Howard and Sheth suggested that consumer decision making differs according to the strength of the attitude toward the available brands; this being largely governed by the consumer's knowledge and familiarity with the product class (10).

The central part of the model deals with the psychological variables involved when the consumer is contemplating a decision. Some of the variables are perceptual in nature, and are concerned with how the consumer receives and understands the information from the input stimuli and other parts of the model. Learning constructs category, consumers' goals, information about brands, criteria for evaluation alternatives, preferences and buying intentions are all included. The proposed interaction In between the different variables in the perceptual and learning constructs and other sets give the model its distinctive advantage (11). Rogers defines an adopter category as a classification of individuals within a social system on the basis of innovativeness. In the book Diffusion of

Innovations, Rogers suggests a total of five categories of adopters in order to standardize the usage of adopter categories in diffusion research. The adoption of an innovation follows an S curve when plotted over a length of time. The categories of adopters are: innovators, early adopters, early majority, late majority, and laggards (12).

It is very important to know that there is a difference from buying a consuming product and health care services. Such a differences are listed as below (13):

- Consumers Suffer from Bounded Rationality
 - Consumers Have Limited Health Literacy
 - The Role of Prices and Product Attributes
- Therefore, it is required to mix the general attribute of health care consumer behavior with theories that is mentioned above. This is so critical to exactly understand the decision-making process of patients in order to encourage using new dialysis machine.

Methods

This research is a descriptive and a survey research and from the aim perspective is an applied research. In the first step the literature review was done base on the library research and there was also a questionnaire which shows the factors relationship. The data were gathered in the autumn of 2012.

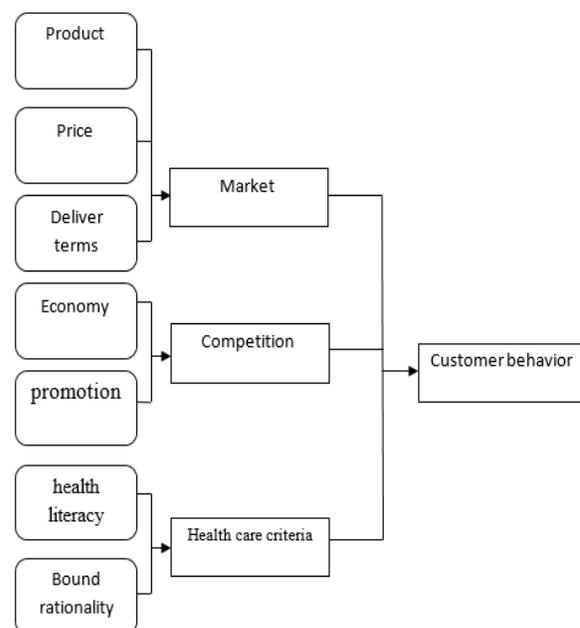


Diagram 1. Research conceptual framework

The research questions which related to the recognized factors in the literature review are set.

1. Is there any relationship between product characteristics and customer behavior?
2. Is there any relationship between price and customer behavior?
3. Is there any relationship between bound rationality and customer behavior?
4. Is there any relationship between delivery terms and customer behavior?
5. Is there any relationship between economy and customer behavior?
6. Is there any relationship between health literacy and customer behavior?
7. Is there any relationship between promotion and customer behavior?

Base on the above questions the questionnaire was designed and with the help of statically tests the hypothesis were tested.

In order to specify the sample that represents the society the researcher was faced with a complex situation. Therefore, the area was divided into four geographical sections and in each section a shopping center was selected. Base on the importance of the centers the samples were selected randomly and on cluster format.

On other hand the number of societies is not clear thus the sample size was estimated with 0.05 error possibility and 0.5 variance.

According to this information the sample size is calculated around 384 persons.

For this purpose, 430 questionnaires (14) were gathered and 418 of them were valid. The questionnaire was divided into two parts the first part was questions about the demography and the second section contain 23 questions and they are used for the hypothesis test. The measuring was done by the 5 scale 1 for the completely disagree and 5 for completely agree.

Results

In order to check the validity and reliability of the questionnaire Cronbach's Alfa (15) method was used. The following table shows the result and concludes that the questionnaire is reliable enough with the 0.866 as the questionnaire's reliability (table 1).

Table 1. Reliability of questionnaire

Questions	NO. questions	Cronbach's Alfa	Concepts	No
2-6	5	0.74	Product	1
7-8	2	0.688	Price	2
9-11	3	0.746	Delivery terms	3
12-14	3	0.573	Economy	4
15-16	2	0.672	health literacy	5
17-19	3	0.622	Promotion	6
20-22	3	0.69	bound rationality	7
23-24	2	0.699	Customer behavior	8
total	23	0.866	total	9

The analysis of variance is 44.466 which indicate there is a significant relation among all the factors and the behavior in general (table 2).

Table 2. Analysis of variance

Model	F	Sig
Reg	44.466	0

In the next steps to understand each factor, influence of consumer behavior in health care market the test will be done on the relationship between factor and behavior also.

In order to prioritize the effectiveness of the factors there is a correlation test among factors, which have effects on the behavior. The result of the test is indicated in the table 3.

Table 3. Prioritizing the result

Effectiveness rank	Correlation coefficient	Factors	No
1	0.419	Product	1
2	0.214	Price	2
3	0.202	Health literacy	3
4	0.078	Promotion	4

The overall result indicates that there are three factors among all that have no strong relationship between them and behavior (table 4).

Table 4. All the model factor analysis

Factors	Standard coefficient	Non standard coefficient		t -Test	Sig.
		Standard error	β		
Constant		0.399	0.38	0.949	0.343
Product	0.419	0.045	0.444	9.796	0
Delivery term	-0.038	0.087	-0.076	-0.791	0.43
Price	0.214	0.054	0.281	4.409	0
Economy	-0.023	0.072	-0.031	-0.537	0.591
Promotion	0.202	0.074	0.292	3.98	0
health literacy	0.032	0.054	0.087	0.89	0.46

Bound rationality that base on the result for t test (-0.12) and the significantly which should be greater than 0.044 there is no relation between bound rationality and consumer behavior. Delivery terms Base on the result for the t test (-0.791) and the significantly which should be greater than 0.05 there is no relation between delivery terms and consumer behavior. The last factor is economy Base on the result for the t test (-0.537) and the significantly which should be greater than 0.05 there is no relation between economy and consumer behavior. On the other hand, product has effect on consumer behavior base on the finding (9.796) it has the most power influence on consumer behavior. The next important factor directing consumer decisions is the price (4.409). Promotion (3.98) is the third effective factors the promotion is different from advertisement. The questions were clearly differentiated for the respondent. The last important factor is health literacy (0.89). All these results were demonstrated in table four and five. Also, there were no exact same research figured out to compare the results with it and to testify the accuracy of findings.

Discussion

Rahul Gupta (16) has also examined the effect of health care product on consumer behavior and find out that there is significant importance on the decision-making process. In this research also was demonstrated that the product has strong influence on consumer behavior. There is a difference

between this two studies Rahul has worked on products this research is working on health care services. By taking into consideration the product in service delivery can be more important because there is an equipment involved and more expertise are required for the service. Also, the long-lasting performance of the product is required because it will be working continuously. The study shows parents are very sensitive about the service that their child is receiving. Therefore, their priority is the product not the price or any other influencer.

According to Mckinsey (17) consumer health insight survey 74 % of the patients were concentrated on costs. By other means cost and price are the number two important factor to choose the service provider by the customers. According to the research in Iran consumer has been focused on cost as well as other part of the world. This indicates the health care service delivery center should concentrate on cost leadership strategy.

Johannes (18) has examined the health literacy influence on Effects of Patient Rating Websites. The finding indicated that there is a strong effectiveness on consumer decision making. The patients are less trusted to mono source of information and with the help of internet and boost of information they will look for the data and knowledge and depend on multi sources of information and knowledge. This information has made decision making of consumers more complex.

Ekiyor (19) has done a research on marketing communication and its effects on consumer behavior. The research finding support the idea of the strong influence of marketing communication. In this research by promotion it was meant to evaluate the communication also not the advertisement side of promotion. The third important influencer is marketing communication. There are vast and different studies to indicates that economy, delivery and bound rationality are related to consumer behavior but in Iran base on different condition in health care market the results are different. Base on economy instability in long run it seems people have ignored that from their decision-making criteria. Delivery is not different from health care centers in Iran they are all same around the country.

The main care center specially in dialysis are managed by government and they are not differed from each other. On the other hand, insurance and its belongings are all same for most of Iranian therefore insurance is not an important issue for parents that much.

There is vast research in new product consumer behavior evaluation but there are not plenty of researches on new services specially in health care which was conducted in this research. Also, the results indicate that there are differences between the cultural attitudes of the patients in different markets. The factors that influence the consumer behavior demonstrates that the hospital and clinic managers should pay attention to the product quality and the service process very much when they intended to start a new service delivery. Also, they have to concentrate on developing communication channels with patients in order to inform and promote the new services.

Conclusion

The importance of launching new product into the market is a very critical issue in any company's life. The factor that shape the behavior of customers are very important and will give the companies the clue to what dimensions of the business are more important to work on.

In this research the new dialyses machine in health care market of Tehran is evaluated. The sample is drowing from different hospitals and clinic center around the city. The major sample ages are among young parents who have a child with renal failure. The main issues that were tested are:

- Product characteristics
- Price
- Delivery terms
- Economy condition
- Bound rationality
- Promotions
- Health literacy

The data analysis indicated that; delivery terms, economy condition and bound rationality have no effect on the behavior. The remaining factors more and less have influence on the customer behavior regarding new product in health care market.

According to the result the product characteristics have the most important influence on the customers' behavior. In this category the issues which should be in attentions are; quality, friendly usage, less pian makers and after sale services. Therefore, these factors should be considered and planned for in the top management level and it should be kept in mind that well-known branded equipment can be very helpful. In order to that it is recommended to consult with a marketing expert in order to find out the exact expectation of customers. Also training the nurses to document the needs and wants of patients in a manner which could be analyzed in the future. Therefore, for the future investment the hospital can decide in a better manner.

The next important factor is price. The issues that hospitals should take into considerations are; the pricing strategy, sales terms and condition, the product availability for test is also affecting the price as well. It is recommended to practice leadership cost strategy in all health care center.

In promotion additional to advertisement and the media the market volume is very important the word of mouth is very critical in Iranian market. Most of the applicants answered that they have a great value for their related thoughts. It is recommended to implement a very productive communicative channel between parents and the hospital staff. Events that can be celebrated among all the engaged persons can improve the cultural mood of the hospital. Also training the staff in the communication management can keep a lot.

The last point which hospitals and clinics should be aware of is heath literacy. The point is not very important among all but should be considered. The main point is the role of doctors and nurses which can transfer the knowledge and trust to the parent who are making the last decisions. Publications and

informative documents can all be transferred through communication channel.

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Conflict of Interest

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Ethics

Ethics code and its issuing reference should be mentioned.

Authors Contributions

Conceptualization, SM.T, VR.M; methodology, SM.T, VR.M software, SM.T; validation, SM.T and F.F; formal analysis, SM.T.; investigation, F.F.; resources, SM.T and F.F.; writing review and editing, SM.T and F.F.; supervision, VR.M.; project administration, F.F

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