Particularities of the Romanian Consumers Regarding Buying Decision Process for Dental Care Services

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Abstract: *The buying decision is strongly influenced by the specificity of consumption of these services – the personal involvement of the consumer in the provision of services, the important role of updating previous services information, a higher need for certainty and the psychological pressure on the patient, etc.*
The article's objective is to investigate and clarify the way in which the variables characteristic to the buying decision process of dental medical services can be used to create a customer database for consolidating relational marketing strategies for the dental offices.
The article relies on previous researches led by the authors concerning Romanian consumers' satisfaction and preferences for dental care services, as well as a recent field survey that identifies the stages and the factors shaping the consumers' buying decision process.
Keywords: *consumer behavior, buying decision process, client databases, relationship marketing*

1. BRIEF LITERATURE REVIEW

The buying decision processes seen as an expression of the consumer behavior related to medical services are relevant for the study, identification and quantification of optimal ways to generate consumer satisfaction.

Given the specificity of the dental care services which along other type of services are subscribed to the general accepted model namely consumption acts – simultaneous provision we can say that the buying decision becomes of major importance, the process by it is formed being relevant for the whole consumer behavior.

Analyzing the sequence of decision stages for dental medical services, we believe that some clarification is required. Thus, the buying decision is outlined before the actual performance, following the performance and consumption, the buying can take place before consumption (the case of payment in advance, subscriptions etc.), or immediately after the service provision or even during the provision itself (in case of treatments, when the medical performance is more complex and presumes more periodical consumption acts).

In any case it is obvious the fact that buying decision is strongly influenced by the specificity of consumption of these services – the personal involvement of the consumer in the performance of services, the very important role of updating previous performances information, the need for greater certainty and the pressure at the level of psychological on the patient etc.

Thereby, the importance of studying this kind of decision processes is revealed through the specialists' capacity to identify the variables and especially to correlate them in case of running process's stages.

The particularity of consumption involvement cause a stronger bond between the buying decision and consumption itself, therefore modeling the buying decision by the specialists will have direct, strong implications at the level of dental care services consumers' long term relationship. All these information represents a solid basis for implementing the right ways of action at the level of marketing strategies designated for this goal – long-term relationship with consumers of dental care services.

Modeling consumer behavior represents a necessity in terms of identifying the most optimal means for attaining marketing decisions efficiency. Behavior models will show to what extent the interaction of variables it is repeating itself and cam be predicted. At the level of modeling generally the consumer behavior were made a number of models that try to explain the its fundamental processes – Nicosia model, Engel – Kollat – Blackwell, Howard – Sheth etc.

In case of health care services in general and dental care services in particular, many experts have had concerns regarding the conceptualization of possible consumer behavior models, which we will try to resume in a brief below.

Thus different models have been formulated in order to explain why patients are following or not the advice to take a medical treatment. Some of the behavior models based on clinical experience which have been published until now were

made targeting the individuals behavior change, and the proposed solutions were based on promotional strategies in order to modify behaviours: Model of beliefs regarding health (Becker, 1974), Social cognitive theory (Bandura, 1977), Theory of rational action (Ajzen and Fishbein, 1980), Stages of change model (Prochaska and DiClemente, 1982).

2. RESEARCH METHODOLOGY

After analyzing the efforts in the medical field regarding consumer knowledge, we wanted to identify the factors involved during the entire buying decision process for dental services as regards the Romanian consumers and determine their inter-correlation degree.

Based on the identified factors, the purpose was the identification of certain action directions that aim at the ways to improve the dentist-patient communication. In addition, given the importance of creating customers databases in each dental office, the identified factors may contribute to the creation and development of those databases in optimal conditions.

An online marketing research survey type was conducted to determine the factors involved throughout the whole buying decision process of dental medical services and the determination of their inter-correlation degree as concerns the Romanian consumers

The choice of the information sources was done according to the purpose and objectives by the research. As regards this research, the information sources are primary, being any person with the age over 18 years, having the residence in Bucharest. People over 18 years old represent the survey base because they are generally able to make their own decisions of buying a dental medical service and are concerned with their own dental hygiene.

The selection of the method for the information collection and systematization took place after choosing the information sources. At this stage, the following take place: conceptual and operational definition of the research variables; the classification of the variables into dependent and independent; the selection of the scales to be used for measuring the variables; the identification of methods for gathering information; the defining of the tools by which information is collected.

The method for gathering the information was the online survey type research. Although conducting an online survey impose a kind of selectivity for the potential dental care services consumers, we consider that the penetration degree of internet access at the level of adult population in Bucharest is high enough not to significantly influencing the results of the research. Also, taking into account the exploratory nature of the research we consider that the selected sample offers a sufficient degree of confidence.

Initially we started the investigation on secondary sources referring to other existing services and dental care services consumer behavior models existing in scientific literature.

At the first stage gathering the data we have an approximated base of 1324 respondents residents in Bucharest which have received the link to the online questionnaire. Respondents have fulfilled the filter type conditions like – the requirement of Bucharest residence and minimal eighteen years of age. It could be observed a response rate about 34 % from the total invitations sent to the initial base, directly contacted, this rate being primarily due to lack of financial incentives for the respondents.

The response rate is still superior to rates usually registered for this type of online survey (20,4% - Deutskens E. et al, 2004; 25-30% - Cook C. et al, 2000; 33% - Nulty D., 2008), because invitations to answer the online questionnaire were sent mostly based on recommendations.

Following the validation process of questionnaires filled in correctly, completely and without errors, the number of valid respondents that could be achieved for final data analysis was represented by 421 people.

At the sample level were introduced only respondents above eighteen years of age, this criteria being considered essential from the perspective of filtering respondents with a minimal personal income and a corresponding buying power.

According to the main scope of the research we stated the objectives as follows: finding variables that contribute to the definition and recognition by consumers of their own dental care needs, highlighting factors that influence internal and external search for information, identify sources of information needed in case of decision making regarding services provided by dentists (internal and external sources), determining the degree of Romanian consumers involvement in seeking dental care information, establish the type of information sought in order to make decisions, identify important variables to be taken into account when consumers are choosing a dental office, characterization of buying habits regarding dental care services, discover the factors influencing the purchase decision when the service provision is taking place, recognition of the elements that determine the return to a dental office, identify factors that influence waiving a dental office after the service provision (have been carried out).

A number of dependent and independent variables were chosen in order to characterize the factors influence as follows: motivation related with visiting dental office, degree of interest in dental health, the contribution of dental aesthetics in self-esteem, individual subject perception regarding importance of dental aesthetics at the job place, source of information for dental hygiene, call frequency for a dental office, to mention only some of the variables considered.
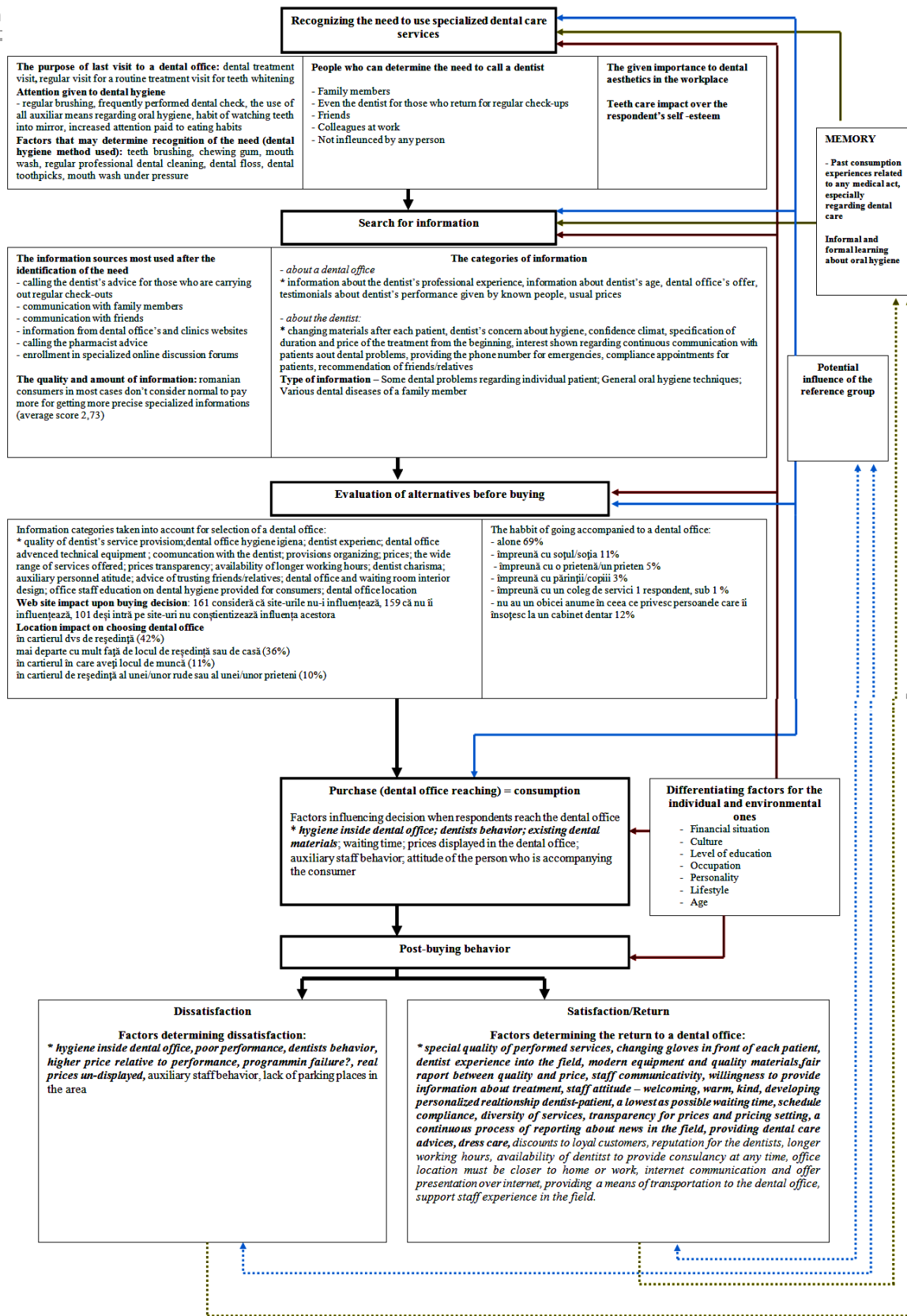
Recognizing the need to use specialized dental care services

The purpose of last visit to a dental office: dental treatment visit, regular visit for a routine treatment visit for teeth whitening
Attention given to dental hygiene
- regular brushing, frequently performed dental check, the use of all auxiliary means regarding oral hygiene, habit of watching teeth into mirror, increased attention paid to eating habits
Factors that may determine recognition of the need (dental hygiene method used): teeth brushing, chewing gum, mouth wash, regular professional dental cleaning, dental floss, dental toothpicks, mouth wash under pressure

People who can determine the need to call a dentist
- Family members
- Even the dentist for those who return for regular check-ups
- Friends
- Colleagues at work
- Not influenced by any person

The given importance to dental aesthetics in the workplace

Teeth care impact over the respondent's self -esteem

MEMORY
- Past consumption experiences related to any medical act, especially regarding dental care

Informal and formal learning about oral hygiene

Search for information

The information sources most used after the identification of the need
- calling the dentist's advice for those who are carrying out regular check-outs
- communication with family members
- communication with friends
- information from dental office's and clinics websites
- calling the pharmacist advice
- enrollment in specialized online discussion forums

The quality and amount of information: romanian consumers in most cases don't consider normal to pay more for getting more precise specialized informations (average score 2,73)

The categories of information
- *about a dental office*
* information about the dentist's professional experience, information about dentist's age, dental office's offer, testimonials about dentist's performance given by known people, usual prices

- *about the dentist:*
* changing materials after each patient, dentist's concern about hygiene, confidence climat, specification of duration and price of the treatment from the beginning, interest shown regarding continuous communication with patients aout dental problems, providing the phone number for emergencies, compliance appointments for patients, recommendation of friends/relatives
Type of information – Some dental problems regarding individual patient; General oral hygiene techniques; Various dental diseases of a family member

Potential influence of the reference group

Evaluation of alternatives before buying

Information categories taken into account for selection of a dental office:
* quality of dentist's service provisiom;dental office hygiene igiena; dentist experienc; dental office advenced technical equipment ; coomuncation with the dentist; provisions organizing; prices; the wide range of services offered; prices transparency; availability of longer working hours; dentist charisma; auxiliary personnel atitude; advice of trusting friends/relatives; dental office and waiting room interior design; office staff education on dental hygiene provided for consumers; dental office location
Web site impact upon buying decision: 161 consideră că site-urile nu-i influenţează, 159 că nu îi influenţează, 101 deşi intră pe site-uri nu conştientizează influenţa acestora
Location impact on choosing dental office
în cartierul dvs de reşedinţă (42%)
mai departe cu mult faţă de locul de reşedinţă sau de casă (36%)
în cartierul în care aveţi locul de muncă (11%)
în cartierul de reşedinţă al unei/unor rude sau al unei/unor prieteni (10%)

The habbit of going accompanied to a dental office:
- alone 69%
- împreună cu soţul/soţia 11%
- împreună cu o prietenă/un prieten 5%
- împreună cu părinţii/copiii 3%
- împreună cu un coleg de servici 1 respondent, sub 1 %
- nu au un obicei anume în ceea ce privesc persoanele care îi însoţesc la un cabinet dentar 12%

Purchase (dental office reaching) = consumption

Factors influencing decision when respondents reach the dental office:
* *hygiene inside dental office; dentists behavior; existing dental materials*; waiting time; prices displayed in the dental office; auxiliary staff behavior; attitude of the person who is accompanying the consumer

Differentiating factors for the individual and environmental ones
- Financial situation
- Culture
- Level of education
- Occupation
- Personality
- Lifestyle
- Age

Post-buying behavior

Dissatisfaction

Factors determining dissatisfaction:
* *hygiene inside dental office, poor performance, dentists behavior, higher price relative to performance, programmin failure?, real prices un-displayed,* auxiliary staff behavior, lack of parking places in the area

Satisfaction/Return

Factors determining the return to a dental office:
* *special quality of performed services, changing gloves in front of each patient, dentist experience into the field, modern equipment and quality materials,fair raport between quality and price, staff communicativity, willingness to provide information about treatment, staff attitude – welcoming, warm, kind, developing personalized realtionship dentist-patient, a lowest as possible waiting time, schedule compliance, diversity of services, transparency for prices and pricing setting, a continuous process of reporting about news in the field, providing dental care advices, dress care,* discounts to loyal customers, reputation for the dentists, longer working hours, availability of dentitst to provide consulancy at any time, office location must be closer to home or work, internet communication and offer presentation over internet, providing a means of transportation to the dental office, support staff experience in the field.

Figure 1: Proposed model for decision making process of buying medical care services
Source: present research

3. RESEARCH RESULTS AND CORRELATIONS VALIDATION

One of the main objectives of the research as stated above was identifying a correlation between different stages of decisional buying process and drawing a possible general model that can be used as a framework for later purposes – customer database creation, setting strategic approach for client service programs, etc. In this respect authors are proposing the following possible model as seen in the figure below:

In the following we exemplify a part of the analysis performed to validate the possible relationships between the variables considered in the model (within) Thus it has been analyzed whether there is a relationship between stage of searching for information about dental office on the one hand and those individuals that can cause respondents to fell the need to call for a dental office services and respectively age and sex of respondents on the other hand. In this respect, the linear multiple regression has been used in order to observe the simultaneous influence of sex, age and types of persons that can help respondents to identify their need to call for a dental office services, all upon informations gathered about a dental office.

Table 1: Values associated with multiple linear regression for the first series of correlations

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
,726[a]	,571	,561	1,772	,391	37,941	7	413	,000	1,912

a. Predictors: (Constant), sex, age of respon dent, typology of persons helping respondents to identify
need to call for a dental office services

b. Dependent Variable: informations gathered about a dental office?

Source: present research

After analyzing the data it can be said there is a correlation because, as it can be seen in the above tabel, there are complied some conditions in order to validate the linear regression equation.

Thus the value of R (multiple correlation) is 0.726, which implies a fairly high predictive power. Also value of R Square determination coefficient and its adjusted value (Adjusted R square) are close to 0.6, which implies fairly good prediction but perhaps there are some variables unidentified in the research.

It can be noticed that as we increase the number of predictors and sample size, there is an artificial variation of R, so using too many predictors could be unjustified. In our case however, this variation is not too high which means it could be possible to use some predictors, unidentified by researchers.

Regarding the standard error of the estimate, (Std. Error of the Estimate), as estimation error becomes smaller, the prediction is more reliable. In this case the error (1.7772), is small enough so that the model may be considered adequate.

The value of Sig. F Change is under 0.005, which implies a very good value of significance test. The value asociated with Durbin-Watson test is 1.912 which is also a value that can certify possibility of correlation acceptance between identified variables. Durbin Watson test is more illustrating that has values closer to 2 in order to specify the errors independence condition.

Analyzing the graph regarding normality condition of residual values, it can be observed that most values fall along the straight line corresponding to a normal distribution. Still, there are some extreme values that must should have adjusted, using mobile average of order 1.

Normal P-Plot of Regression Standardized Residual
Dependent   variable: most   important category
of information used in making the decision to call
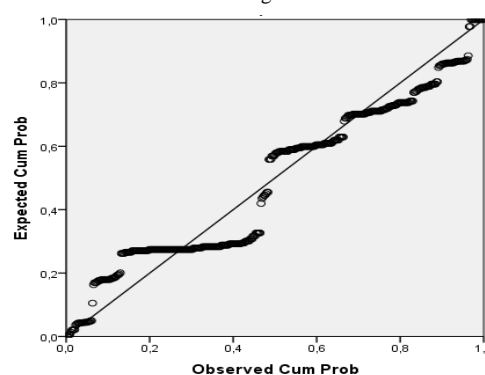
Also, authors are aware of systematic errors due to respondents self-administration of the questionnaire and in the same time due to the sample structure and size (the small number of respondents aged over 65 being in our opinion one of the problems).

The second tested relationship is represented by the correlation between variables regarding choosing source of necessary information for decision regarding consumption of future dental care services, with the importance of dental aesthetic at workplace, care for teeth impact on respondents self esteem and sex of respondents.

Dependent variable was considered the source of information regarding the future consumption decision about dental care service, the others being considered independent variables. For the analysis it was also used the multiple linear regression.

Table 2: Values associated with multiple linear regression for the second series of correlations

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,865[a]	,634	,629	,773	,134	32,217	2	418	,000	1,903

a. Predictors: (Constant): importance of dental aesthetic at workplace,care for teeth impact on respondents self esteem, sex of respondents

b. Dependent Variable: source of information regarding the future consumption decision about dental care service

Source: present research

According to data drawn from the analysis it can be seen that this correlation can be considered a valid one because R and R Square (determination coefficient) have values closer to 1 value, Sig. F Change is below 0.005, and Durbin-Watson test associated coefficient is close to the value of 2.

In the same time, the graph of the cumulative standardized residual values indicates a relatively good overlapping degree with the theoretical model corresponding to a normal distribution, which indicates an acceptable assembly regarding normality condition of residual values.
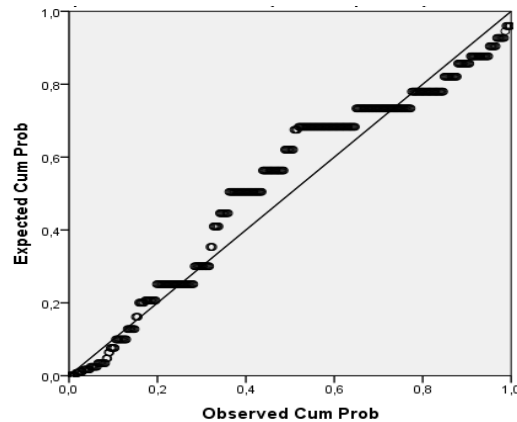

Figure 2: Cumulated standardized residual values normality for second correlation
Source: present research

4. RESEARCH CONCLUSIONS AND LIMITATIONS

It should be noted that there were made correlations between different variables through which we aimed to observe the chain influence degree between urban Romanian consumer behavior model stages - specific to City of Bucharest, combined also with categorial variables. Because of objectif conditions, authors can't present all the validated correlations.

As well, it should be noted that not all the relationships were demonstrated, on the one hand because of its rather exploratory nature of the research, authors being aware that the sample is not representative and also being taken into account the existence of systematic errors caused by self-administration of the questionnaire and lack of incentives for the respondents.

The authors conducted this research for purely scientific motivations with the purpose to identify eventual features of Romanian consumers and to demonstrate the suitability for creating consumer's databases which has to start from those variables that affect the dental care services consumer behavior from the urban area.

The research represents an opportunity meant to clarify future directions for further scientific approaches that want to investigate Romanian dental care services market and consumer related to these services problematics.

The context in which we have conducted the research is outlined also by the fact that in a previous research we explored the level of implementation and perception regarding marketing activity principles at the level of dental offices from City of Bucharest.

Along interviews conducted with this opportunity it was highlighted a real concern at the level of dental offices management about marketing activity principles implementation but a total lack of reliable criteria for creating customer databases build from a series of variables that are effective in customer segmentation.

Authors wanted to identify whether there are variables used in the consumers behavior study process from which it can be started to create a functional database for a dental office. The proposed model within this article although it has the limitations set forth above, provides a general framework of analysis that can be customized by research conducted at the specific target level for each dental office partly.

References:
 1. Ajzen, I, and Fishbein, M. (1980), *Understanding attitudes and predicting social behavior*, Prentice-Hall, New York.
2. Bandura, A. (1977), *Social learning theory*, Prentice Hall, New Jersey.
3. Becker, M.H. (1974), "The Health belief model and personal health behavior", *Health Education Monographs*, Vol. 2 No. 4, C. B. Slack.
4. Blackwell, R.D., Miniard, P.W., and Engel, J.F. (2006), *Consumer behavior (10th ed.),* Thomson, South-Western.
5. Cătoiu, I., and Teodorescu, N. (2004), *Comportamentul consumatorului (3rd ed.),* Uranus, Bucharest.
6. Coleman, W., Warren, W.E., and Huston, R. (1994), "Factors influencing the choice of a new dental service", *Health Marketing Quarterly*, Vol. 11 No. 3-4, pp. 145-160.
7. Cook, C., Heath, F., and Thompson, R. (2000), "A Meta-Analysis of Response Rates in Web- or Internet-Based Surveys", *Educational and Psychological Measurement*, Vol. 60 No. 6, pp. 821–836.
8. Deutskens, E., de Ruyter, K., Wetzels, M., and Oosterveld, P. (2004), "Response Rate and Response Quality of Internet-Based Surveys: An Experimental Study", *Marketing Letters* Vol. 15 No.1, pp. 21–36.
9. DiClemente, C.C., and Prochaska, J.O. (1982), "Self-change and therapy change of smoking behavior: A comparison of processes of change in cessation and maintenance." *Addictive Behaviors***, Vol.** 7 No. 2, pp. 133-142.
10. Eli, I., Schwartz-Arad, D., and Bar-Tal, Y. (2008), "Anxiety and ability to recognize clinical information in dentistry", *Journal of Dental Research*, Vol. 87 No. 1, pp. 65-68.
11. Entwistle, V.A., and Quick, O. (2006), "Trust in the context of patient safety problems", *Journal of Health Organization and Management*, Vol. 20 No.5, pp. 397-416.
12. Fishbein, M., and Ajzen, I. (2010), *Predicting and Changing Behavior*, Taylor and Francis Group, New York.
13. Gelb, B.D., and Gilly, M.C. (1979), "The effect of promotional techniques on purchase of preventive dental care", *Journal Consumer Research*, Vol. 6, pp. 305-308.
14. Howard, J.A., **and** Sheth, J.N. (1969), *The theory of buyer behavior*, Wiley, New York.
15. Kollat, D.T., Blackwell, R.D., **and** Engel, J.F. (1970), *Research in consumer behavior*, Holt, Rinehart and Winston, New York.
16. Levav, J., and McGraw, A.P. (2009), "Emotional Accounting: How Feelings About Money Influence Consumer Choice", *Journal of Marketing Research*, Vol. 46 No. 1, pp. 66–80.
17. Mooradian, T.A., and Olver, J.M. (1997), "I can't get no satisfaction: The impact of personality and emotion on postpurchase processes", *Psychology and Marketing*, Vol. 14 No.4, pp. 379-392.
18. Nicosia, F.M. (1966), *Consumer decision processes. Marketing and advertising implications*, Prentice-Hall, New Jersey.
19. Nulty, D. (2008), "The adequacy of response rates to online and paper surveys: what can be done?", *Assessment and Evaluation in Higher Education*, Vol. 33 No. 3, pp. 301-314.
20. Prochaska, J.O., and DiClemente, C.C. (1982), "Transtheoretical therapy: Toward a more integrative model of change", *Psychotherapy: Theory, Research and Practice***, Vol.** 19 No. 3, pp. 276-288.
21. Prochaska, J.O., Velicer, W.F., Rossi, J.S., Goldstein, M.G., Marcus, B.H., Rakowski, W., Fiore, C., Harlow, L.L., Redding, C.A., Rosenbloom, D., and Rossi, S.R. (1994), "Stages of change and decisional balance for twelve problem behaviors", *Health Psychology*, Vol. 13 No.1, pp. 39-46.