

# Designing Mobile Application for the Over the Counter Drug Marketing

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## Abstract

The increased usage of mobile apps has a great potential in Pharmacy market. Through the use of mobile apps, web portals and social media may allow a fast and wide diffusion of awareness for over the counter (OTC) drugs and attract a large number of customers, thus increasing the value of searching for information, quality and lower costs of the purchase. The goal of this paper is to identify the key factors as antecedents of customer satisfaction for the design of a mobile app for OTC drug marketing. To this aim, the authors use the Kano model that allows categorizing service attributes according to how they are perceived by customers and estimating their impact on customer satisfaction. This model is adopted in order to identify, express and latent needs of customers and to design a mobile app for OTC marketing according to their perceptions and expectations. To apply the Kano model, the authors used quantitative data collected through 537 questionnaires that were sent to the Slovenian internet users (June and August 2013). The results of this analysis can be relevant to the pharmaceutical companies; drugs vendors and marketing managers plan strategy and operational activities, for pharmaceutical companies in the field of OTC drugs marketing, for application developers, and for all those concerned with OTC drugs marketing issues.

**Keywords:** OTC drugs, mobile applications, Kano model, customer satisfaction, mobile marketing

**JEL classification:** M10, M31, F14, K23, L65, L81

## Introduction

The paper is focused on the research of customer satisfaction with Web 2.0 applications for over the counter (OTC) drugs marketing. The pharmaceutical industry and drugs retailers become aware about the importance of Web 2.0 as a channel of communication with consumers. OTC market has become a mature market, because more and more people are aware of the importance of maintaining a healthy fitness and active lifestyle (Roblek and Bertoneclic, 2014). We argue that the pharmaceutical industry pharmacists and physicians are increasingly using the internet and social media as one of the forms in the process of organizational change and adaptation responses to widespread use of internet and social media by consumers (e.g. patients) (Roblek, 2015). By that, the pharmaceutical industry provides competitive advantage, creates goodwill, public awareness about their products and services and gives access to knowledge (Bughin, Chui and Manyika, 2010). Consequently, the use of Web 2.0 offers the competitive advantage and increases added value, both for providers and for consumers (lower cost of access to information, services and products, higher margins) (Roblek, 2015).

A very important factor in the context of digital marketing that effect on consumer satisfaction is the question of the quality of providing products and

services online (Roblek, 2015; Roblek and Bertoncej, 2014). Online retailers of the OTC drugs must not overlap the real facts about the products or offered counterfeit products, which could later affect the health and satisfaction of the customers.

The goal of the paper is to identify the expectations of the OTC drug marketing mobile applications users and obtain relevant characteristics that can help to mobile application developers.

We have developed two research questions for the purpose of this research according to the baseline of a Kano model (Sauerwein et al., 1996), i.e.:

RQ 1: Which features of the Web 2.0 application can be used to obtain a high level of a customer satisfaction?

RQ2: Which of the web 2.0 applications features have a more than proportional influence on satisfaction and which attributes are an absolute must in the eyes of customer?

The first part of the paper is focused on the introduction of the problem. The main part of the paper presents research. This chapter is more accurately defining the Kano model. The penultimate chapter is focused on the analysis of the results of research with using the Kano model. The paper is concluded with a discussion and conclusions.

## Methodology

### *Sample*

In order to test the research propositions, a questionnaire survey method was used to collect the responses from Slovenian users of the internet. During the June and August 2013, questionnaires were distributed to email addresses. It was addressed to the individuals who were asked to fill in the questionnaire themselves. To maintain external validity, we tried to sample data from different respondent groups (faculties, companies, mails from friends).

A total of 3000 invitations to the research were distributed, of which a total of 630 were returned (a response rate of 21%). After eliminating 93 responses due to incompleteness or the absence of Internet shopping experience, a sample of 537 (17.9%) was ultimately employed in our empirical analysis. According to Dilman (1999), our response rate is comparable with similar research using mail surveys. The sample includes 231 women and 306 men. Sample data on individuals revealed that from the 537 respondents, more than half belong to the age group between 30 to 40 years, 58 percent. The second most represented age group is over 40, with 30%, with 11 percentages followed group 20-29 and the smallest group is 15 to 19 years only 2%. Primary education and less have 6%, vocational education have 15%, secondary education have 49%, 1 & 2 Bologna cycle have 27% and 3 Bologna cycle have 3% of the respondents. Without income is 2%, less than 546 EUR of the income is 16%, between 565 and 1001 EUR of income is 61%, between 1002 and 1991 EUR of income is 17% and more than 1992 EUR have 17% of respondents. 1% of the respondents live in the village that has under 999 citizens, in towns between 1.000 and 4.999 citizens live 6%, in towns between 5.000 and 9.999 citizens live 59%, in towns with over 10.000 and to 49.999 citizens live 33% and in towns over the 50.000 citizens live 1% of the respondents.

### *Applying the Kano model*

In the paper Roblek and Bertoncej (2014) we used the structural equation modelling for the testing of three models. We confirmed in model 1 that consumer satisfaction with safety and information has a significant effect on the consumer trust.

In the model 2 it was confirmed that the consumer trust also has a significant effect on virtual brand loyalty. The results of model 3 show a partial mediator effect of consumer trust regarding the relationship between consumer perception of corporate social responsibility and virtual brand loyalty. In this paper we decided to test the data collected through the questionnaire was analysed with using the model proposed by Noriaki Kano (1984) to find the ideal characteristics of an e-pharmacy OTC market that can better satisfy customer expectations.

We used the Kano model because of its advantages prior structural equation modelling (Dominici and Palumbo, 2013):

1. The Kano Model can be applied before designing the customer's ideal product or service and after, when it is used for estimates the consumption experience.
2. Compared with other models, the Kano Model does not assume the existence of a linear relationship between product/service performance and customer satisfaction. Kano noticed that customers' requirements are not equivalent and that some requirements, in fact, are capable of generating more satisfaction than others. Customer satisfaction is not always proportional to the functionality of the good, which implies that higher quality does not necessarily lead to higher satisfaction for all product attributes or services requirements.

Kano classified product/service attributes into six categories based on their impact on customer satisfaction (Kano et al., 1984):

- Must-be (M) (dissatisfier or basic factors): customers consider these requirements as basic factors; thus, their presence will not increase customers' satisfaction level significantly while their absence will cause extreme dissatisfaction.
- One-dimensional (O) (performance factors): these factors cause satisfaction if their performance is high while they cause dissatisfaction if their performance is low. These attributes are linear and symmetric because they are typically connected to customers' explicit needs and desires. The company should try to be competitive here.
- Attractive (A) (satisfiers or excitement factors): these requirements cause customer satisfaction if delivered while they do not cause dissatisfaction if they are not. The company can use these factors to distinguish itself from its competitors in a positive way.
- Indifferent (I): customers do not care about these features either way.
- Reverse (R): customers do not desire these product attributes and also expect the reverse.
- Questionable (Q): It is unclear whether customers expect these attributes because they gave unusable responses due to misunderstanding the questions on the research or making an error when filling out the questionnaire.

The horizontal axis in the Kano diagram is the state of fulfilment of a certain quality attribute while the vertical axis displays customer satisfaction with a certain quality attribute (Kano et al., 1984). In Kano diagram, only the first four requirements are represented.

## Results

### Implementation of the Kano model

The authors of the Kano model provided their own approach to identifying customer needs and for developing Kano questionnaire. Kano's questionnaire is characterized by pairs of customer requirement questions. Each question is composed of two parts:

1. How do you feel if feature X is present in the product/service? (functional form of question).
2. How do you feel if feature X is not present in the product/service? (dysfunctional form of the question).

The data are then analysed by means of a special evaluation table, which results in a categorisation of attributes for each respondent. For each functional and dysfunctional question, the customer can select one of five alternative answers, which are expressions of different degrees of customer perceptions: (1) I like it that way, (2) It must be that way, (3) I'm neutral, (4) I can live with it that way, and (5) I dislike it that way. Crossing the answers for the functional and dysfunctional questions for every questionnaire, through the help of a matrix formulated by Kano, customer perceptions can be evaluated into quality dimensions. Frequencies of single-respondent categorisations are then used to provide the final classification of attributes in our case are presented in table 1 (Mikulic and Prebezac, 2011).

From the results in Table 1 is evident that it comes to the major differences between the requirements of the maximum frequency and the frequencies of the other characteristics. The questionable results (Q) and the reverse results (R) have extremely low frequencies, implying that the questionnaire had a high reliability.

A user friendly platform requirement cannot be classified in only one category, because it is too low difference between the highest frequency and other frequencies of the characteristics. We used the M>O>A>I rule to organize the importance of the requirements.

The users considered the control on online OTC drugs shop as more important as competent sellers and user friendly platform (whose frequency is between must be and questionable). The flexibility on buying OTC drugs is more attractive than better access to the information. Customers are indifferent to the on line pharmacists consulting.

Table 1

Classification of the requirements according to the Kano model

	O	M	A	I	R	Q	Requirement category
<b>User friendly platform</b>	191	<b>219</b>	102	21	4	0	Must be
<b>On line pharmacists consulting</b>	91	87	107	<b>231</b>	17	4	Indifferent
<b>Competent sellers</b>	17	<b>357</b>	139	24	0	0	Must be
<b>Flexibility on buying OTC drugs 24 h</b>	31	161	<b>206</b>	125	8	6	Attractive
<b>Better access to the information</b>	21	147	<b>183</b>	141	29	16	Attractive
<b>Control on online OTC drugs shop</b>	4	<b>487</b>	46	0	0	0	Must be

Source: Authors

### Interpretation and evaluation of the Kano model

We are going to analyse the data from table 1 with using customer satisfaction index. This method was developed by Berger et al. in 1993. The customer satisfaction coefficient indicates if satisfaction can be improved by meeting a product requirement or if fulfilling this product requirement just prevents the customer from being dissatisfied (Berger et al., 1993). The results are shown in table 2.

1. Customer satisfaction index (CS):

$$(CS) = \frac{A + O}{M + O + A + I}$$

The customer satisfaction index has a value between 0 and 1 (values close to 1 indicate great satisfaction while values close to 0 indicated low satisfaction).

2. Customer dissatisfaction index (CD):

$$(CD) = \frac{M + O}{M + O + A + I} * (-1)$$

The customer dissatisfaction index can have a value between -1 and 0 (values close to -1 indicate great dissatisfaction while values close to 0 indicate low dissatisfaction).

Table 2

Customer satisfaction and customer dissatisfaction indexes for each app requirement

App requirement	CS	CD
User friendly platform	0,55	-0,77
On line pharmacists consulting	0,38	-0,34
Competent sellers	0,29	-0,70
Flexibility on buying OTC drugs 24 h	0,45	-0,37
Better access to the information	0,41	-0,52
Control on online OTC drugs shop	0,09	-0,91

Source: Authors

The interpretation of the CS:

- The user friendly platform has the greatest impact on customer satisfaction. If we consider Kano model then the user friendly platform is situated between M –that has no influence on satisfaction and O that has influenced on higher satisfaction because his performance is high.
- Control on online OTC drugs shop, competent sellers and on line pharmacists consulting have low levels on the customer satisfaction index. These results are must be (control on online OTC drugs shop and competent sellers) and indifferent (on line pharmacists consulting). Their presence has according to the Kano model no influence to the customer satisfaction.

The explanation of the CD:

- The non-inclusion of control on online OTC drugs shop, user friendly platform and competent sellers are caused the greatest level of dissatisfaction. According to the Kano model both requirements are must be and their absence is causing extreme dissatisfaction.

- The on line pharmacists consulting and flexibility on buying OTC drugs 24 h have the lowest degree of dissatisfaction. The flexibility on buying OTC drugs 24 h is an A requirement. They do not cause an expressed dissatisfaction. By the on line pharmacist consulting customers do not care about these features either way.

The results of customer satisfaction and customer dissatisfaction indexes confirm the Kano models results.

## Discussion and conclusion

Based on Kano model it is evident that no one of requirements are not having a high influence on the customer satisfaction. The user friendly platform has a more than proportional influence on satisfaction.

The customers exposed as a must be requirements in Web 2.0 applications the control on online OTC drugs shop, competent sellers and user friendly platform. Customers are recognising the need for security in e-commerce. In the business environment it is necessary to be aware of the negative consequences of IT developments such as the emergence of high-tech crime. The abuse of information communication technologies is increasing. Crimes are divided into one where computers are used as a means to commit or as the object of enforcement of criminal activity in the area of illegal use of the internet. Due to increasing sales of counterfeit medicines and posts false information on medicines with the intention of misleading the customer it has to be provided a stricter control on the internet and social media content.

The limitation of the research is that it is geographically limited to Slovenia and it is specialised on the OTC market mobile applications. According to socio-demographical factors of the respondents the results of the research can only determine specific customer behaviour and preferences for Slovenian market.

Further research might include only an analysis of the quality and user satisfaction with a particular function of mobile apps. The advantage of the research is that it can be implemented in other cultural areas.

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