A study of user preferences when choosing applications for smartphones used to order food from supermarkets

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Abstract. This article explores user preferences when choosing applications. The analysis was carried out on the example of applications used to order food delivery from supermarkets. We reviewed and compared a group of factors on which user preferences are based. The analysis of user proposals was carried out in regions where the cold arctic climate prevails most of the year. The climatic feature of the regions where users live is one of the determining factors in the choice of applications installed in a smartphone and used to order food. The analysis carried out showed quantitative indicators of user preferences in the choice of applications. The analysis data can be relevant for services marketing services involved in the development and optimization of applications for ordering food.

1 Introduction

The rapid spread of new technologies in areas such as smart home, smart transport, etc. has been decisive in the last decade in changing the lifestyle of people around the world, including residents of regions with a cold Arctic climate [1, 2]. One of the most relevant technologies for residents of such regions is the possibility of obtaining goods and services without leaving home. Such opportunities are provided by applications that are actively developed and implemented in recent years and installed on modern smartphones. One of the most significant applications for users is an application for remote ordering food from supermarkets. Using the application allows the user to save up to 17 hours a week on average due to the fact that the user himself does not need to go to the supermarket to buy food, after ordering through the application, food is delivered to the user of the application within a few hours to his home. The use of such an application is especially relevant for residents of regions with a cold arctic climate, since in conditions of extremely low temperatures, and in addition to often snowfalls, an independent trip to the supermarket by car is associated with significant difficulties.

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2 Materials and Methods

To conduct a series of observations aimed at studying user preferences when choosing applications, using the example of applications for ordering food delivery from supermarkets, a corresponding questionnaire survey of users was conducted.

The user survey was conducted in three different age groups:
• group 1: age 18-30;
• group 2: age 31-45 years;
• group 2: age 46-65 years.

The age breakdown of users was carried out to take into account the difference in preferences in different age groups.

All users were given survey questionnaires including the question:
- what is the main factor for you when choosing an application installed on your smartphone and designed for remote ordering food in supermarkets.

To collect and process research data, various methods discussed in [3–30] were used, including assessing the distribution of the arithmetic mean in survey data using the Gaussian method.

3 Results and Discussion

3.1 Results survey

3.1.1 First user group

The results of the survey of the first group of users (18-30 years old) are presented in Figure 1.

![Fig. 1. The results of the survey of the first group of users (18-30 years old).](image-url)
3.1.2 Second group users

The results of the survey of the first group of users (aged 31-45) are presented in Figure 2.

![Figure 2](image)

Fig. 2. The results of the survey of the first group of users (31-45 years old).

3.1.3 Third group users

The results of the survey of the first group of users (46-65 years old) are presented in Figure 3.

![Figure 3](image)

Fig. 3. The results of the survey of the first group of users (46-65 years old).

Arithmetic mean distribution \( M \) in the survey data was estimated by the formula

\[
M = \frac{X_1 + X_2 \ldots + X_i}{n}
\]  

(1)

where \( X_1 \ldots X_i \) are the values of the quantitative attribute, \( n \) is the number of observations.
The results of calculations allow us to conclude that the data distribution is Gaussian.

3.2 Discussion

The results of user surveys provide data that applications for ordering groceries from supermarkets are already quite common among users of regions with a cold arctic climate, while preferences are distributed among several applications, users cite ease of use and the maximum number of supermarkets to choose as the main factor for choosing an application. It can be concluded that in the future users will prefer an application that meets the following formulated conditions:

- ease of use;
- the maximum selection of supermarkets presented in the application.

This conclusion is confirmed by the graph with survey data summarized for both respondent groups (Fig. 4).

![Fig. 4. Average score of survey data for all age groups.](image)

From the data obtained (Fig. 4) it follows that the average value of the priority of factors is:

- for the factor "Ease of use" - 33%;
- for the factor "Maximum choice of supermarkets presented in the application" - 31%;
- other factors - 19%.

Coefficient of variation characterizing the relative scattering user survey results calculated by the formula

$$V = \frac{100S}{Y}$$  \hspace{1cm} (2)

where $Y$ is the result of a separate survey.

4 Conclusions

The study provides data on user preferences when choosing applications for ordering food delivery from supermarkets. The data reflects the preferences of users living in regions where the cold arctic climate prevails most of the year. The climatic feature of the regions where users live is one of the determining factors in the choice of applications installed in a smartphone and used to order food. The analysis showed that the main factors of user
preferences in choosing applications are ease of use and the maximum choice of supermarkets presented in the application (33% and 31%, respectively). The analysis data presented in this article may be relevant for services marketing services involved in the development and optimization of applications for ordering food.

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