

Development of User Subscription Services in E-Commerce: Effects on Consumer Behavior

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Summary

The trend of satisfying consumer needs (payment for mobile communication, music services, cab ordering, banking products, and food delivery) on a unified online platform has shaped a digital ecosystem, an instrument creating a unified space of economic interaction. Representatives of e-commerce are major stakeholders in the development of such tools. In particular, subscription services (multiservice subscriptions) allow users to create their own ecosystems based on their personal preferences. The rate of subscription service use is growing around the world, yet understanding of the peculiarities of development of this e-commerce sphere is limited due to insufficient research. The study aims to determine the motives and barriers to the use of subscription services (multiservice subscriptions) by consumers and their relationship with consumer characteristics. Proceeding from an online survey of 200 users, the study determines the relationship between the gender and income of consumers and their use of subscription services, motives and motivators for using subscription services, and barriers to the choice of a particular subscription service. The obtained results may serve as a basis for managerial decisions in e-commerce and for improving the effectiveness of marketing solutions.

Keywords:

multiservice subscription; services; commerce; digital ecosystem.

1. Introduction

The sphere of e-commerce is marked by rapid changes caused by the introduction of new technologies [1,2] and changes in consumer preferences [3]. The rise of e-commerce is the subject of numerous studies [4-6] but innovations in the e-commerce market are continuing [7]. Among such innovations are subscription services [8]. The concept of subscription retailing, which delivers goods directly to the consumer on a regular schedule (monthly or weekly) is not entirely novel. This model has been used for decades for a number of categories of goods, such as printed publications (newspapers, magazines) [9]. However, the application of this strategy to a wider range of products and services is a new development. This trend promises to rise

rapidly, and by 2022, it is estimated to bring in 42 billion dollars in consumer income [10]. The constant growth of this sphere specifically in recent years is conditioned by the development of e-commerce.

Despite the growth, size of the market, and potential of subscription-based e-commerce, there are a number of challenges in its implementation. According to J.U. Becker, M. Spann, and T. Schulze [11], quite considerable is the cost of attracting new customers, while increased competition leads to up to 70% of customer base outflow. These issues demonstrate the need for scientific research into consumers' motives for using subscription services and the obstacles to this [12,13]. The relevant theories of consumer behavior [14] may not be sufficient to understand this new direction of e-commerce, which actualizes the need for further research in this area.

2. Literature Review

Subscription services have received relatively little attention over the years. The vast majority of research focused on intangible products or print media offers, providing limited insight into today's subscription market for tangible merchandise [15]. From the point of marketing, subscription services have been viewed as a means of creating a regular customer base and nurturing loyal customers [16]. It is only recently that there have appeared studies on the specifics of consumer behavior in relation to subscription services.

In particular, a study by B. Ramkumar and H. Woo [17] evidences that subscription services minimize or even substitute for consumers' efforts in searching for, evaluating, and choosing the right product, thereby leveling out the so-called "decision fatigue" [18]. L. Jiang, Z. Yang, and M. Jun [19] believe that these benefits are valued by consumers who lack free time due to busyness. Q. Tao and Y. Xu [20] in their study of the effects of subscription services emphasize such factors in the decision to subscribe

as convenience, economic benefits, and perceived enjoyment.

H.H. Chun, K. Diehl, and D.J. MacInnis [21] analyze consumer motives for using subscription services, which they classify into utilitarian (usability, price-quality ratio) and hedonistic (experienced emotions). A study by J.-W. Lian and D.C. Yen [22] demonstrates that the key factors prompting users to start using subscription services are recommendations from other users and word-of-mouth, while discounts, the price-quality ratio, and offer personalization are strong motivators for continued subscription.

The listed studies give an idea about the motives and barriers to the use of subscription services and provide data about the potential users of these services.

Nevertheless, there is not enough research into the factors acting as disincentives to using subscription services. Recent studies, however, outline some hindrances to the use of subscription services. A study by S.F. Bischof, T.M. Boettger, and T. Rudolph [23] points to "the lack of experience shopping on social media" and "perceived difficulties with unsubscribing", and H. Woo and B. Ramkumar [24] add to this "the risk of purchasing low-quality/unnecessary goods", which, according to the authors, could be mitigated by a free returns policy. Poor quality, lack of variety, and the absence of perceived value, according to D. Grewal et al. [25], are the main reasons for unsubscribing.

A small number of studies look into consumers and their characteristics that lead them to use subscription services. G. Punj [26] demonstrates that spending on subscription services correlates with users' income and education levels, and willingness to pay for subscription services strongly correlates with gender and age. Women are found to be more inclined to use clothes and makeup subscription services, and men tend to use services related to games and foodstuffs. Research by D.M. McCarthy, P.S. Fader, and B.G.S. Hardie [27] reveals that influential factors in the use of subscriptions are age, place of residence, and income: youth between 25 and 40, urban residents, and people with higher incomes are more likely to accept a subscription offer.

Although the considered studies do give some insight into the topic of interest, we believe that their results have little to do with multiservice subscription services, which include a variety of products and services: discounts on mobile service, cabs, food delivery; music services, banking products, online movie theater services, and other services intended to meet the basic needs of users.

Thus, there is an apparent need for additional research on users' attitudes to multiproduct subscription services, as well as for an empirical study allowing for comparative analysis of the motives and hindrances to the use of subscription services and consumer characteristics.

The purpose of our study is to determine the motives and barriers to the use of subscription or multisubscription services by users and their relationship with consumer characteristics.

Research objectives:

- to identify the main motives, motivators, and hindrances to consumers' use of subscription/multisubscription services;

- to establish the relationship between motives, motivators, and barriers to consumer use of subscription/multisubscription services and the gender and income characteristics of consumers.

3. Methods

To establish consumers' motives and hindrances to the use of subscription/multisubscription services, we conducted an online survey of respondents using cell phone service. The study took place from December 2021 to January 2022 and was organized by the Moscow Metropolitan Governance University, the Financial University under the Government of the Russian Federation, and the Moscow Polytechnic University.

The study proceeded in two stages.

The first stage involved a pilot online survey [28] of 202 residents of Moscow aged 30-40 years old who agreed to take part in the study and answer the questions regarding their age, gender, and annual income. The survey was posted online on the VKontakte social media platform and was administered online. The link to the VKontakte page with the questionnaire was sent via email to a group of 1,345 consumers, whose email addresses were taken from the data of loyalty cards of a large Moscow retailer.

Characteristics of the sample are given in Table 1.

Table 1. Sample characteristics

Sample characteristic	Category	N, people	%
Gender	Male	58	28.7%
	Female	144	71.3%
Annual income	< 300,000 RUR	46	22.8%
	300,000-500,000 RUR	89	44.1%
	500,000-1,000,000 RUR	67	33.1%

In the first stage of the study, the respondents were asked the following questions:

1. Are you a user of at least one subscription/multisubscription service?

If the respondent was a subscriber, the questionnaire continued:

2. During the last three months, how regularly have you been using the subscription/multiservice subscription service? (three answers options: often (always), rarely (sometimes), never)

3. What motives drive your choice of a subscription service?

4. What prevents you the most from choosing a particular subscription service or encourages you to opt out of a subscription service?

At the beginning of the online questionnaire, it was clarified for the respondents that by multiservice subscriptions we understand subscriptions to services the use of which brings users additional benefits through discounts and additional bonuses for paying for services or goods from the companies participating in the multiservice subscription. In the second stage of the study, mathematical processing of the obtained data was performed and conclusions on the results of the study were drawn.

Mathematical processing was applied to the following sample parameters: respondents being/not being subscribers, frequency of subscription/multisubscription use, motivation and motivators to use a subscription service, and barriers to choosing and continuing to use a subscription service.

4. Results

The survey results concerning the presence/absence of subscription/multisubscription relative to the respondents' gender and income characteristics are provided in Table 2.

Table 2. Relationship of sample characteristics with the presence of a subscription/multiservice subscription

Sample	Category	Presence of a subscription/multiservice subscription		Presence of a multiservice subscription		Lack of a subscription/multiservice subscription	
		N	%	N	%	N	%
Gender	Male	36	62.1%	17	29.3%	22	37.9%
	Female	111	77.1%	47	32.6%	33	22.9%
Annual income (RUR)	< 300,000	14	30.4%	4	8.7%	32	59.6%
	300,000-500,000	72	80.9%	26	29.2%	17	19.1%
	500,000-1,000,000	61	91.0%	34	50.7%	6	9.0%
In total for the sample		147	72.8%	64	31.7%	55	27.2%

The results of the survey (Table 2) indicate that men buy subscriptions/multiservice subscriptions less often than women (62.1% vs 77.1%). The same ratio is observed in the use of multisubscription services (29.3% vs 32.6%). Furthermore, respondents with higher income much more commonly have some subscriptions, including multiservice ones, and the higher the income, the greater the share of subscribers: from 30.4% (with 8.7% having a multiservice subscription) with annual income less than 300,000 RUR up

to 80.9% with annual income between 300,000 RUR and 500,000 RUR (with 29.2% having a multiservice subscription) and 91.0% with annual income of 500,000-1,000,000 RUR (with 50.7% having a multiservice subscription).

The results of the survey of subscription service consumers on the frequency of their use of subscriptions/multiservice subscriptions are given in Table 3.

Table 3. Relationship between sampling characteristics and frequency of subscription/multisubscription usage

Sample	Category	Frequency of use					
		often (always)		rarely (sometimes)		never	
		N	%	N	%	N	%
Gender	Male	12	33.3%	15	41.7	9	25.0%
	Female	64	57.7%	40	36.0%	7	6.3%
Annual income (RUR)	< 300,000	11	78.6%	3	21.4%	0	0%
	300,000-500,000	35	48.6%	29	40.3%	8	11.1%
	500,000-1,000,000	30	49.2%	23	37.7%	8	13.1%
In total for the sample		76	51.7%	55	37.4%	16	10.9%

Overall, around half of the sample of consumers who have subscriptions/multiservice subscriptions use them on a regular basis, and only 10.9% have not used them at all in the past 3 months. Furthermore, the frequency of subscription service use is practically unrelated to income. An exception to this pattern is low-income consumers who,

if subscribed to a particular subscription service, most often use it on a regular basis (78.6%).

The result of the survey of subscription users on their motives and motivators for the use of subscriptions/multiservice subscriptions are presented in Table 4.

Table 4. Relationship between sample characteristics and motives and motivators for using subscription/multisubscription services

Sample characteristics	Motives and motivators
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		Ease and convenience of use	Price to quality ratio	Monetary savings	Payment method	Shipping costs	Access to a wide range of products
Gender	Male	58.3%	38.2%	33.7%	14.6%	10.3%	33.8%
	Female	49.6%	55.1%	58.4%	19.4%	13.7%	39.4%
Annual income (RUR)	< 300,000	68.9%	79.6%	100%	22.8%	68.4%	35.8%
	300,000-500,000	55.2%	57.6%	69.3%	18.6%	12.8%	36.1%
	500,000-1,000,000	46.3%	36.4%	18.8%	12.5%	0%	36.7%
In total for the sample		52.8%	46.9%	44.5%	15.6%	12.4%	36.2%

The most frequently mentioned motive behind the use of subscription services is "the ease and convenience of use", which is noted as the main motivator by 52.8% of the respondents. One of the common descriptors of "convenience" is the expression "getting rid of unnecessary worries", since online purchases save extra time. A part of the respondents point to additional "convenience" in the form of receiving "large items", which eliminates the need to transport heavy purchases on one's own. "The ease of use" as viewed by the respondents is closely associated with "convenience" but covers such aspects as "the simplicity of registration, purchase, and cancellation of orders", thus being more related to the quality of service. In addition, 46.9% of the respondents indicate as their motive "price to quality ratio", and for many subscription users (44.5%) monetary savings due to low prices on

products determined the appeal of the subscription service. Meanwhile, the results indicate that the price to quality ratio and monetary savings have a greater effect on women as compared to men (55.1% vs 38.2% and 58.4% vs 33.7%, respectively).

36.2% of the respondents report their main motivating factor to be "access to a wide range of products". This factor was more frequently pointed out by multiservice subscription users, although it may also be appealing in all types of subscriptions, for example, in cases when the respondents note that subscriptions provided them with an opportunity to "try out a new product".

The results of the survey of subscription users regarding barriers to choosing a particular subscription service or unsubscribing from a service are given in Table 5.

Table 5. Relationship between sample characteristics and barriers to choosing a particular subscription service or unsubscribing from a service

Sample	Category	Obstacle					
		Inconvenience of use	Low product and service quality	Mandatory and contingent choices	Low awareness	Unnecessary products/services	High cost
Gender	Male	5.8%	15.9%	32.8%	7.6%	25.9%	6.8%
	Female	7.4%	15.4%	25.2%	12.4%	14.4%	9.4%
Annual income (RUR)	< 300,000	8.2%	12.8%	42.2%	9.2%	22.4%	18.2%
	300,000-500,000	5.9%	15.1%	32.3%	9.6%	21.1%	14.4%
	500,000-1,000,000	6.4%	16.5%	26.5%	11.7%	15.6%	3.2%
In total for the sample		6.1%	15.7%	28.4%	10.2%	18.3%	8.8%

The leading obstacle to choosing a particular subscription service or unsubscribing from one is "mandatory and contingent choices of products" pointed to by 28.4%. Many respondents note that they prefer to choose the necessary products for themselves at the time when they are needed, and therefore think about unsubscribing. Furthermore, 15.7% of the respondents report problems with the low quality of products or offers under the subscription, and 18.3% draw attention to "unnecessary goods/services", arguing that "you have to pay for something you rarely use" and "you pay for goods in the package that are not needed".

5. Discussion

The conducted study provides an analysis of consumer opinions and behavior with respect to e-commerce by subscription/multiservice subscription in light of gender and income differences. The obtained results expand knowledge in this evolving field of e-commerce and allow various stakeholders to better understand the motivations of consumers and obstacles in the implementation of this type of service.

Several studies [6,7,29] show the growth rate of subscription-based e-commerce. We believe that the success of multiservice subscriptions, on the one hand, owes to the provision of "seamless technology" to users. These are native services that meet people's needs so well that after a while, service users generally forget how they lived without them before. On the other hand, multiservice subscriptions have properties that minimize transaction

costs for users when implementing their functions, allowing these services to be embedded in the value chain [2].

Our study also notes that despite the growing popularity of subscription-based e-commerce, users still have quite little information about the range of products and services offered under the multiservice subscription. For this reason, we suggest that a broader introduction of multiservice subscriptions depends on the effectiveness of increasing consumer awareness of multiservice subscription offerings, which can be assisted by the results of our study.

Our findings demonstrate that women much more often subscribe to multiservice subscriptions than men. In addition, the intention to get a multiservice subscription is associated with higher incomes, because people with high incomes appreciate the benefits of convenience and time efficiency more.

While a study by L. Jiang, Z. Yang, and M. Jun [19] indicates usefulness and ease of use as the main factors affecting the decision to buy a subscription, our study presents a wider range of motives and obstacles to the implementation of multiservice subscriptions. Furthermore, despite J.-W. Lian and D.C. Yen [22] indicating "trust" as one of the key factors in the decision to make online purchases, our respondents no longer take this factor into consideration. Today's consumers appear to have complete trust in e-commerce, which was promoted by the restrictions caused by the COVID-19 pandemic [30].

Additionally, although the research performed by E. Polman and K.D. Vohs [18] reveals such consumer motives as amazement and excitement, our findings suggest that, after all, utilitarian motives are the ones that prevail. This coincides with the conclusions of H.H. Chun, K. Diehl, and D.J. MacInnis [21], whose study shows that the motives of convenience and ease of placing an order correlate with the opportunity consumers' efforts in searching for, evaluating, and choosing a product or service through the use of a subscription, which lowers the level of uncertainty of choice in decision-making.

6. Conclusion

The presented results provide insight into differences in consumer attitudes, opinions, and behaviors toward e-commerce services sold through multiservice subscriptions. The limitations of the study include the limited resources of the researchers, which allowed us to obtain limited information about potential respondents, which influenced the selection of respondents for the online survey.

Given the growth promise of subscription-based e-commerce, further research is needed to analyze the properties of this phenomenon (in particular, convenience and security for the user), and the impact of changes in these properties on user behavior.

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