Innovative forms of organization of food provision for low-income and no-income people

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Abstract. In this paper, the issue of food security for indigent is considered. The authors note the need to move from traditional methods to innovative ones. By innovative methods, the authors understand methods that are aimed at several problems, one of which is the organization of access to food for people in need. Free food from commercial enterprises and foodsharing are considered as innovative forms. The paper performs a stakeholder analysis of the listed forms of providing food to indigent and formulates recommendations for optimizing each of them.

1. Introduction

One of the global problems of mankind is poverty. The word poverty should be understood as the economic situation of an individual or a certain social group, in which it is impossible to satisfy the basic needs of this individual or social group [1]. Accordingly, people belonging to the category of poor experience difficulties with the regular purchase of food [2, 3].

One of the modern challenges that have further reduced the availability of food has been the pandemic of coronavirus infection. Because of it, many working people lost their income and the opportunity to purchase food [4, 5]. Most of all, this problem affected the citizens of countries whose authorities did not provide sufficient support and guarantees for workers.

Another factor reducing the availability of food is agflation (inflation of the agricultural sector). This term should be understood as outstripping the growth rates of prices for agricultural products in a certain country over the growth rates of inflation in a given country [6].

Due to the urgency of the problem of the lack of food for people in need, new ways of solving it arise [2]. The purpose of this work is to analyse innovative ways of organizing food security, compare them with traditional ones and develop recommendations for the development of food security.

2. Materials and Methods

Carrying out the study, the authors used an extensive toolkit of theoretical and practical research methods:

1. The authors used the method of descriptive review of sources for the formulation of the problem. To find information, the authors turned to both scientific literature and Internet sources
2. Further, the authors again turned to searching for information in Internet resources in order to identify traditional and innovative practices of providing food to indigent.

3. The authors identified the concept of foodsharing and the idea of the company “FreeCompany” as innovative methods of product provision. The paper performs a stakeholder analysis of both approaches.

4. Induction, idealization and mental modeling were used to develop practical recommendations for the development of specific concepts of providing people with food.

3. Results and discussion

By traditional ways of providing food, we mean those projects that have one goal – to provide food to people in need. By innovative methods we mean projects that with providing food to those in need, are also aimed at solving other tasks (see Table 1).

### Table 1. Ways of organizing food provision for indigent.

| Name of the method          | Organizer (resource provider) | Characteristic                                      | Innovative/Traditional |
|-----------------------------|-------------------------------|------------------------------------------------------|------------------------|
| Food stamps                 | State                         | Issuance of a coupon for the right to receive food to indigent | Traditional            |
| Free canteens               | Foundations (collection of donations from society or companies) | Providing ready-to-eat culinary products for people in need for free | Traditional            |
| Free food at commercial enterprises | Commercial enterprise | Product offer without charge                          | Innovative             |
| Foodsharing                 | Self-organization and/or foundations | Division between members of the food society         | Innovative             |

Further in the work, a detailed analysis of the concept of foodsharing and the concept of providing free food on the basis of commercial enterprises will be carried out.

3.1 Free food at commercial enterprises

"FreeCompany" is a network of catering establishments with an area of 10-20 sq.m. each (that is, the points are focused on takeaway work), where hot dogs, pizza and drinks are sold [7]. A distinctive feature of this company is the opportunity to receive free hot dogs once a day, regardless of social status, age or income. Thus, this is the first company whose main goal is to make a profit, offering free food for everyone.

It should be noted that the free hot dog in the case of "FreeCompany" is not aimed at indigent in the strict sense of the word, it is guaranteed to be available to any visitor, who have mobile application. Thus, the company provides food not only to people in need, but to everyone. The method proposed by "FreeCompany" is innovative, as it combines two goals: providing free food and promotion on the market (by forming an attractive image of the company in the eyes of consumers and giving them the opportunity to get acquainted with the trial product for free). Currently, catering establishments are actively developing new tools to attract customers, including through the search for innovative pricing methods, and the activities of "FreeCompany" [8].
According to the founder of the company, each point generates from 50 thousand rubles a month, respectively, the decision to provide free food is economically feasible [9]. Thus, “FreeCompany” can simultaneously generate profits and perform an important social function in providing food to people in need (Table 2).

### Table 2. Advantages and disadvantages of “FreeCompany” for key stakeholders.

|                      | Advantages                                      | Disadvantages                                                                 |
|----------------------|-------------------------------------------------|-------------------------------------------------------------------------------|
| For business         | - Low costs for opening and maintaining points   | - Low marginality                                                             |
|                      | - Formation of an attractive image in the eyes of consumers |                                                                               |
|                      | - Easily scale your business                     |                                                                               |
| For customers        | - The possibility of tasting a trial product for free | - The trial product is smaller and is prepared according to a simplified recipe, which does not allow to get a complete picture of the company's assortment; |
|                      |                                                   | - Long waiting time for a free hot dog during rush hour (since paid orders have priority) |
| For people in need   | - Free hot dog for everyone                      | - The size of a free hot dog is not enough for a full meal                     |
|                      | - Food is provided daily                         | - Only hot dog is available, other food and drinks are not provided           |
|                      |                                                   | - There is no place for its consumption                                      |
|                      |                                                   | - You can get a hot dog only if you have a smartphone with the app installed |
|                      |                                                   | - During rush hours, the waiting time for a free hot dog can be very long     |

According to the authors, the “FreeCompany” solution is of interest, but it cannot become universal in the context of the fight against hunger. Nevertheless, the analysed idea can be modernized in order to provide those in need with food. This requires:

1) By introducing the option to pay for the order, not for yourself, but for the person in need.
2) Providing each point with an interactive kiosk with a mobile application of the company, through which anyone in need can go through the registration procedure in order to subsequently receive QR codes. Examples of similar kiosks can be found in popular fast food establishments (McDonald's, Burger King, etc.)

### 3.2 Foodsharing as a tool of food providing for low-income and no-income people

Foodsharing is one of the ways of distributing food among members of society [10]. As a rule, the exchange is carried out with food products, the shelf life of which will soon expire, but the quality of which remains satisfactory, and the consumption of such goods is safe. Foodsharing refers to innovative forms of providing food to those in need, as it is also focused on another task – minimizing waste. Note that foodsharing can be commercial, when food is sold at a big discount, and non-
commercial, when food is given away for free. In the context of providing food to deprived persons, this work will consider exclusively non-commercial foodsharing, which is based on several principles:

- The distribution of food at all stages of foodsharing is free of charge. Products donated to charity cannot be used for profit at any stage of distribution.
- The benefactor is responsible for the quality of the transferred products.

Foodsharing can be organized in two ways:

1) B2B2C foodsharing. It assumes the presence of an intermediary (food bank) responsible for the distribution of products. This mechanism is used when a company (usually a store or restaurant) is ready to donate a large amount of products to charity [11]. In this case, they resort to the help of charitable foundations that take products from the store/restaurant and distribute them among hungry people with the involvement of an extensive network of volunteers [12, 13].

2) C2C foodsharing. In fact, C2C foodsharing is based on self-organization. A person who is ready to share food places an announcement about it in the appropriate groups on social networks. People who need products respond to the published post. Then both sides agree on the place and time of the transfer of food [14].

Since the essence of B2B foodsharing is close to the concept of food bank, it will not be considered in this paper. The authors will focus on the analysis of C2C foodsharing, corresponding to modern platformization trends and solving several important tasks (Table 3).

**Table 3. Advantages and disadvantages of C2C foodsharing for key stakeholders.**

|                         | Advantages                           | Disadvantages                                                   |
|-------------------------|--------------------------------------|-----------------------------------------------------------------|
| **For the benefactor**  | - Getting satisfaction from helping to needy  | - Waste of personal time                                       |
|                         | - Reduction of waste from life       |                                                                 |
| **For deprived persons**| - Gratuitous receipt of food         | - Products must be picked up by yourself                       |
|                         | - Possibility to choose              | - It is necessary to have means of communication that allow you to access the Internet |

C2C foodsharing is predominantly advantageous for both sides. The philanthropist achieves personal social goals by transferring goods to charity and reducing the amount of waste, thereby increasing personal social responsibility and informal status in society [15, 16]. Deprived persons can choose among the offers posted on the Internet the most attractive for themselves.

A common disadvantage of B2C and C2C foodsharing is their instability: a huge amount of goods can arrive one day, and no one will transfer them the next. On one day, 150 people can share food in a certain city, and on another - none. This situation can be improved by following measures:

1. Increasing people awareness through information campaigns (these campaigns can be organized or supported by the state as it is interested in reducing food waste). If people get informed about food sharing and its social and ecological advantages, in this case more citizens would participate in food sharing activities. It will lead to a substantial increase of food available for distribution and to a higher stability of food donations.

2. Modification of legal framework. Many tools that are used abroad in order to support C2C food sharing (like public fridges [17, 18]) are forbidden in Russia. If these restrictions are eliminated, participation in food sharing will become easier. It would help to increase the volume of food as well as the number of people who can benefit from food sharing. However, due to its inherent limitations, foodsharing cannot be the only tool for providing food to people in need. It should be used in combination with traditional tools.
4. Conclusion
The widespread traditional ways of providing food to the poor in the world are bad because they are aimed only at providing food to poor people, and therefore require large resources and control. Innovative methods against their background have significant advantages, since in addition to providing food to those in need, they create additional value for business (advertising, reducing recycling costs) and society (reducing the environmental burden during food-sharing). This creates motivation for stakeholders to use them. The state, as one of the key stakeholders in the process of caring for the environment and organizing food security, needs to create conditions for the development of innovative forms of food security, in particular, to create favorable tax conditions for the development of food sharing.

References
[1] Skoufias E, Diamond A, Vinha K, Gill M, Rebolledo-Dellepiane M 2020 World Development 29 104887 https://doi.org/10.1016/j.worlddev.2020.104887
[2] Plotnikov V, Nikitin Y, Maramygin M and Ilyasov R 2021 International Journal of Sociology and Social Policy 41(1/2) 139-153 https://doi.org/10.1108/IJSSP-03-2020-0074
[3] Statistics of the world's hungry vawilon.ru URL: https://vawilon.ru/statistika-golodayushhih/
[4] Friedman C 2021 Disability and Health Journal 14 (4) 101166 https://doi.org/10.1016/j.dhjo.2021.101166
[5] Saxena A, Brahmagar Mohan S 2021 Advances in Food Security and Sustainability https://doi.org/10.1016/j.bs.af2s.2021.07.006
[6] Charaia V, Papava V 2018 Annals of Agrarian Science 16 (2) 201-205 https://doi.org/10.1016/j.aasci.2018.04.007.
[7] FreeCompany official website freecompany.org URL: https://freecompany.org/
[8] Kotliarov I 2021 Food Processing: Techniques and Technology 51(1) 146–158 (In Russ.) https://doi.org/10.21603/2074-9414-2021-1-146-158.
[9] Interview with the founder of FreeCompany // Forbes.ru [Electronic resource] URL: https://www.forbes.ru/forbes-agenda/forbes-agenda/411339-yuriy-levitas-my-nachali-ispolzovat-v-fast-fude-biznes-model-it (date of visit: 06.10.2021).
[10] Mundo Y, Villioth L, Radtke J 2019 In book: Infrastructuring Publics DOI:10.1007/978-3-658-20725-0
[11] Narayanan S 2021 Food Policy 100 101998 https://doi.org/10.1016/j.foodpol.2020.101998
[12] Foodsharing in St.Petersburg rg.ru URL: https://rg.ru/2020/01/29/reg-szfo/chem-peterburzhecv-privlekaet-fudshering.html
[13] Saving of food vk.com URL: https://vk.com/sharingfood
[14] Schanes K, Stagl S 2019 Journal of Cleaner Production 211 1491-1501 https://doi.org/10.1016/j.jclepro.2018.11.162
[15] Bakharev V, Kapustina I, Mityashin G and Katrashova Yu 2020 Siberian Journal of Life Sciences and Agriculture 12(5) 79–96 (in Russ.) https://doi.org/10.12731/2658-6649-2020-12-5-79-96
[16] Ikramov R and Mityashin G 2021 E3S Web of Conferences 284 11018 https://doi.org/10.1051/e3sconf/202128411018.
[17] Morrow O 2019 Geoforum 99, 202-212 https://doi.org/10.1016/j.geoforum.2018.09.003
[18] Reynolds C, Goucher L, Quested T, Bromley S, Gillick S, Wells V, Evans D, Koh L, Carlsson Kanyama A, Katzeff C, Svenfelt Å and Jackson P 2019 Food Policy 83 7-27 https://doi.org/10.1016/j.foodpol.2019.01.009