
Management of Innovations in Organic Food Distribution and their Impact in Times of Covid-19 Pandemic and Electronic Economy in Poland

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Abstract:

Purpose: The major goal of this study is the identification and assessment of innovations in organic food distribution and their importance in times of pandemic and electronic economy in Poland, especially actions undertaken by special chain stores of organic food.

Approach/Methodology/Design: A study of a selected chain store was carried out in 2021 by the Mystery shopper method in Warsaw, Wrocław, Swarzędz and Poznań. It was comprehensive and of nationwide character. The results were compared with customers' opinions in which way a comprehensive assessment was achieved. Additionally, the study presents information about the development of chain stores in Poland including those which sell organic foods. Characteristics of organic food customers in the time of pandemic and electronic economy have been presented as well as the concept and classification of innovation and innovative solutions implemented in similar chain stores abroad.

Findings: Implementation of technological innovation was assessed for a selected specialist chain store. Innovative, 24 hour, phone application based customer self-service with no personnel present (24/7) meets customers' expectations and is well rated by most of them (well and very well by 81%). Customers' comfort and communication were best rated, time efficiency slightly lower, whereas reliability was given the lowest, though better than good, score.

Practical Implications: The study provides clients with the possibility of doing shopping with assistance of a consultant when needed, and it offers a chance for an individual, unattended purchase with the use of an application for those who avoid direct contact with other people in the time of pandemic and want to choose the product by themselves. Such a system is an option between the traditional form of stationary retailing and online shopping.

Originality/Value: The proposed solutions are to contribute to the development of organic food market and marketing in the studied area.

Keywords: Distribution, organic food, customer service, sale, purchase, innovation.

JEL classification: M31, O32, Q13.

Paper Type: Case study.

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1. Introduction

The latest report ‘Influence of COVID-19 on FMCG market’ includes results of a survey of 4000 households, conducted with the use of the Panel method, CAWI technique by GfK Polonia. According to it, stationary stores which want to maintain customers’ trust need to comply with the highest safety standards and provide fast, safe service. One of the things that customers need is to limit contact with other people (Report GfK, 2020). Innovations which are supposed to help meet these expectations largely determine development of the stores and loyalty of the customers.

According to the Polish language dictionary ‘innovation’ means “introduction of something new, a newly introduced item, novelty, reform” (Słownik Języka Polskiego, 1992). In Oslo textbook, published by OECD in collaboration with EUROSTAT, the following four innovation types are distinguished (Podręcznik Oslo, 1999): – product innovations– creation of new products or introduction of changes into the already existing ones – process innovations– changes in the product creation process and service delivery methods – organizational innovations – changes in organizational methods or implementing new ones –marketing innovations – changes in marketing methods or implementing new ones (Perenc and Hołup-Iwan, 2011). Although an increasing number of both domestic and foreign publications on the above mentioned subjects appear (Ferenc and Koreleska, 2015; Eichler and Hes, 2017; Arias and Alarcon 2019; Grimsby and Kure, 2019), there is a gap in the field of organic food which is to be filled by this publication.

2. The Scope and Methods of Research

The main goal of the project was to identify and assess the innovations which were implemented in organic food distribution and their importance in times of pandemic and electronic economy in Poland, with a special emphasis on specialistic chain stores. The main goal includes the following detailed goals:

- presentation of the genesis and characteristics of chain stores in Poland including specialist ones,
- identification of organic food buyers’ shopping behavior changes in times of pandemic and electronic economy,
- presentation of the concept of innovation and its classification,
- characteristics of a selected organic food chain store and its innovations.

The survey was conducted in July and August 2021 by the Mystery shopper method, in Warsaw, Wrocław, Swarzędz and Poznań. It was of comprehensive and nationwide character. Overall, all Bio Family retail stores (7 facilities) were analyzed. The results were confronted with the opinions of their customers. Opinions included in Google were used as well. A total of 360 opinions from

2017-2021 were analyzed. Next, there was a group interview to provide a better interpretation of the results. The data was analyzed with the use of the descriptive statistics methods.

Selection of a specialist chain store was of purposeful character. Sales range – nationwide, growth dynamics, innovative character and operation period – more than 2 years were used as the selection criteria. Additionally, based on the subject literature, the development of chain stores in Poland after 1989, including those involved in organic food sale, are discussed. Characteristics of organic food consumers in the time of pandemic and electronic economy and their behavior changes are presented as well as the notion of innovation and its classification accepted in the study

3. Genesis of Chain Stores Including Specialist Organic Ones in Poland

Until the 90s large stores in Poland functioned as department stores and supermarkets under the command system whose owners were cooperatives. After 1989, due to social-economic reforms, private ownership in the field of trade accounted for 94%. Many small enterprises with private domestic capital came into being in the first year of the transformation period. Then, foreign trade companies launched their businesses in Poland and started to be dominant.

Favorable tax regulations, availability of qualified labor force and a large absorbable market encouraged them to purchase or lease real properties to start their business (Wrzesińska 2012; 2016). The development of foreign chain stores in Poland is presented in table 1.

Table 1. *Development of major chain stores in Poland*

Discount store		Year	Supermarket		Year	Hipermarket		Year
Globi (GIB Group)		1991	Billa (Austria)		1990	HIT (Dohle/Germany)		1993
REMA 1000 (Norway)		1992	IKEA (Sweden)		1990	Makro Cash&Carry (Netherlands)		1993
Netto (Dansk supermarket Denmark)		1995	E.Leclerc (France)		1992	Geant (Casino France)		1995
Plus (Tengelmann/Germany)		1995	Leroy	Merlin (Auchan/France)	1994	Real (Metro GD/Germany)		1995
Biedronka (Jeronimo Martins/Portugal)		1997	Tesco-Savia (England)		1995	Auchan (France)		1996
Edeka (Germany)		1997	Leader	Price (Casin/France)	2001	Castorama		1996

Source: *Katalog Sieci Detalicznych w Polsce W Wrzesińska-Kowal, J. 2016. Rozwój zagranicznych sieci handlowych w Polsce. Zeszyty Naukowe SGGW, Polityki Europejskie, Finanse i Marketing, (16 (65)), 25-36.*

Currently, the main Polish food chain stores include, Dino, Frac, Polomarket, Społem, Top Market, Topaz.

Initially, the chain stores did not offer any organic food. Over time, some products of this type appeared, e.g., in Macro or Carrefour. Now, the largest food providers do offer organic food, though its share in the whole assortment is not significant and the products are frequently imported (Koreleska and Chwal, 2016). Gradually, organic trade brands appeared such as Bio Organic in Lidl, K-Bio in Kaufland, goBio in Biedronka, BioVillage in E.Leclerc or Auchan Bio with constantly growing assortment (Fajerski, 2019). Opening in Warsaw a new Carrefour retail store in 2020 with only organic food is the next development step in this field.

When it comes to specialist stores offering only organic food, initially, like conventional stores with domestic capital, they functioned as single, independent shops. Nowadays, there are around 500 stores of this type but it is difficult to assess them due to their high turnover. During the last 15 years, new organic food chain stores have appeared the biggest of which being Organic Farma Zdrowie chain. It consists of about 32 stationary delis functioning under the names: Organic Farma Zdrowie, Organic Zielone Oko oraz Organic Markety ekologiczne (Organic Markets) and two online shops (Firmy eksperckie...2021). The chain has taken over such food networks as Żółty Cesarz (Organic Farma Zdrowie przejmuje...2016) as well as Eko-zakupy etc. Since 2016 Italian group Ecor NaturaSi is its strategic investor which since that year has been the owner of 63.4% of its shares. The latest data shows that sales of OFZ group in 2020 was 102.7 mln PLN, including the sale of retail company Organic Farma Zdrowia – 56.2 mln PLN. Unfortunately, a turnover drop by 8%, as compared to 2019, was reported which was attributed to the pandemic (Firmy eksperckie ... 2021). Currently, the company is focused on the development of all e-commerce channels, though in 2016 there were reports on the company planning to open 100 stationary stores.

4. Organic Food Consumer in the Time of the Pandemic (PMR)

According to latest PMR report published in 2021 entitled “Bio food market in Poland on development prognosis for 2021-2026”, 25% of Poles claim that they reach for organic food more often than before (nationwide survey, representative group of respondents n=1032). Moreover, it was found that about 8% of Poles buy bio food on the occasion of each shopping. This group includes more young people (18-34 years), with university degree, from towns with population of 20 thousand inhabitants and medium income group. Frequency of bio food shopping depends also on the education level. In the time of pandemic male customers and younger people became more interested in a purchase of bio food than before. It needs to be noted that they come from groups less interested in buying organic food as compared to others (Raport PIMR, 2021).

More than half of people who during the last three months before PMR study had bought food products with organic certification (target group of respondents, n=634) declared purchasing products in discount stores (55%). Almost one fourth

would buy products directly from the farmer (19%), and 13% in hypermarkets. Those who declared a regular purchase of organic food chose hypermarkets (31%), direct purchase from the farmer (26%) and food discount stores (19%) (Report PIMR, 2021).

According to the authors, the Polish bio food market will follow western European trends and its share in the food market is supposed to increase. In the years 2021-2026, an average annual growth rate (CAGR) for bio food market will approach 10%. The factors that have a positive influence on the bio food market include, among others: better health awareness of Poles, extension of the bio product offer (especially in large stores), as well as a large number of bio/eco/wege promotions offered by food chains (Report PIMR, 2021).

5. Bio Family – Case Study

Bio Family is a Polish chain of supermarkets with organic products that was founded in 2017. Currently, it consists of seven shops which function in four towns, that is, Poznań (3 markets), Warsaw (2 shops), Swarzędz (1 shop), Wrocław (1 shop) (Stationary shops, 2021). The network has also an online store (Ryneczek Bio, 2021). Earlier reports indicate that the managers focus on large Polish cities and their suburbs. The store average area is supposed to be around 500 or even 700 square meters (Fajerski, 2019).

Apart from innovative elements, material evidence, that is, the shop exteriors and interiors were assessed as well. The assumption was that these elements can also indirectly affect assessment of the innovative solutions. The study provided the basis for further analyses. They were modeled on earlier studies (Mazurkiewicz-Pizło and Pizło, 2018).

A number of factors were taken into consideration in assessment of the store environment. The highest score was given to clarity of the shop signboards both during the day and at night. It is a very important element for new customers whose attention can be attracted by well-designed and interesting signs, and for people who being there for the first time do not waste time or energy for looking the place. Due to 24 hour sale, it is important for a store to have appropriate signing both in reality and online.

Another highly rated element of the environment was cleanliness of the doors, walls and windows as well as the premises, whereas the lowest score, though medium, was given to the color of walls. There were also concerns about availability and capacity of parking lots. It turned out that one of the shops had no charge free parking lots for its clients which is a big problem for shoppers who use cars. There were two other selling points whose parking lots had not enough space to accommodate the clients' cars.

Table 1. *External environment of the store*

Specification	Average
Clarity of signing during the day	5,0
Clarity of signing at night	5,0
Cleanliness around the shop	4,86
Possibility to park a car near the store	4,57
Cleanliness of doors, windows and walls	4,57
Availability of public transport	4,43
Location in relation to competitive stores	4,43
Entrance road for pedestrians	3,71
Facilities for the disabled or people with small children	3,71
Pedestrian traffic	3,57
Capacity of parking lots	3,29
Prestige of location - district	3,29
Wall color	3,0

Source: Own research.

The store interior was rated even higher. No product shortage was reported in any category or any of the chain stores. The assortment offer of the chain consists of more than 6 thousand products including food, cosmetics, cleaning agents and books about healthy lifestyle and civilization diseases. There are products of the following categories: cereals, fruit-vegetable products, dairy, meat, sausages, oils, coffee, tea, sweets, fruits, vegetables, potatoes and alcohol. Apart from standard elements, the store is equipped with – a freezer, counter, refrigerated display case, shelves and there is a coffee machine and kid’s corner.

Clarity of the product category and price marking were also well rated. Although in Poland prices must be placed on a given product, directly near it, or close to it, it looks different in practice. Since high prices of organic food is one of barriers to its purchase, it must be emphasized that the clarity of price marking is very important. Customers know how much they will pay to avoid embarrassment at the check-out stand. Cleanliness, product exposition, availability of shopping carts and shopping bags were highly rated as well. The wall color, music, and smell were given the lowest, though still medium, score. They were found to be little original.

Table 2. *Interior*

Specification	Average
Cleanliness	5,0
Clarity of signing of particular products	5,0
Availability of shopping carts	5,0
Availability of shopping bags	5,0
Exposition of products	5,0
Cleanliness of prices	5,0
Product availability	5,0
First impression	4,9

Atmosphere	4,9
Wideness of passages	4,9
Esthetics	4,71
Lighting	4,57
Equipment	4,57
Smell	3,0
Music	3,0
Wall color	3,0

Source: Own research.

All Bio Family chain stores are 24/7 self-service ones, which means that one can do shopping around the clock for seven days in the week even without the personnel present. At night the entrance is activated by means of a smart phone application. The application can be downloaded from AppStore and Google Play. It is integrated with a data verification platform created by international software house. Thanks to it, the organization protects itself from theft. To open a door it is necessary to scan QR code in a screen reader located near the door. It is also possible to write the code by hand. During the day customers can use self-service checkouts. Products must be scanned and payment by card or Google Pay or Apple Pay (Pallus, 2019) application is required.

In this part of the assessment, 4 elements that make up logistic customer service, that is, time, reliability, communications and comfort are taken into account (Beier and Rutkowski, 2014). Customers' comfort and communication were best rated, time efficiency slightly lower, whereas reliability was given the lowest, though better than good, score.

Table 3. Assessment of product availability in a self-service store

<u>Specification</u>	<u>Average</u>
Communication	4,9
Comfort	4,9
Time	4,6
Reliability	4,4

Source: Own research.

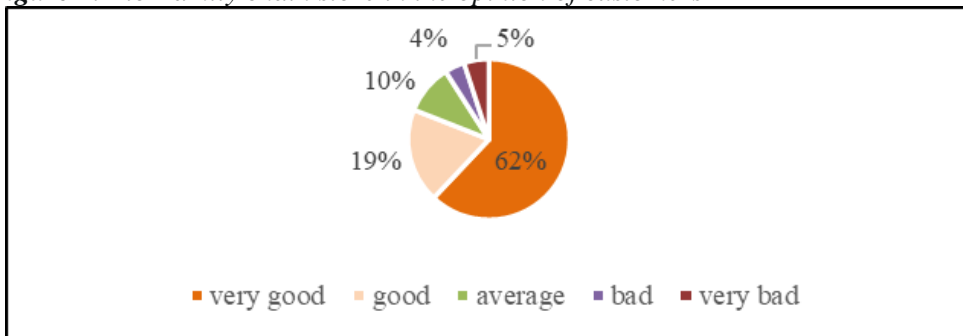
The group interview indicates that consumers appreciate innovation. Innovative concept of Bio Family chain was based on observations of foreign markets including, e.g. the concept Amazon Go (Pallus, 2019) which involves buying products in a store unattended by personnel and using self-service checkouts (benchmarking). A customer activates an application in his/her mobile phone and scans it at the entrance to the shop. After choosing products they exit the store and the money is automatically taken from their bank accounts. Similar solutions are being tested in South Korea, Germany, France, etc.

The rating of innovative solutions from the surveys was confronted with customers to be later included on Google business cards for Bio Family chain stores. A total

of 360 opinions were analyzed. They came in two forms, i.e. free statements and/or choosing an element on a five element grading scale – from 1 star (the lowest grade) to 5 stars (the best grade). The analysis shows that a great majority of customers who took part in the survey provided a positive grade – good or very good (5 or 4 stars). Only 9% expressed their dissatisfaction (1-or 2-stars).

Mean value μ calculated from customers' opinions for all of the chain retail stores was 4.3 (standard deviation $\sigma = 1.1184997392340628818$, median and dominant - 5). Whereas, for individual stores it ranged from 3.9 (Szwarczędz) to 4.6 (Poznań). In the remaining cases it was from 4.1(Poznań) through 4.2 (Wrocław) up to 4.3 (Warsaw).

Figure 1. Bio Family chain store in the opinion of customers



Source: Own study based on the opinions from Google cards.

A detailed analysis of customers' comments on implementation of innovation shows that most of them were positive, more than 80%, examples of which include: 'A good option with the possibility of entrance after opening hours', 'Modern approach to trade', 'A very interesting solution to a shop functioning', 'Open 24h 7 days in a week', 'Opening hours and access via application on holidays and at night is a big advantage', 'Ideal shop for Sunday when all other stores are closed and we need something to prepare a good dinner', Service (significant automation) (...) very good', 'Technological 10/10. There are no queues, self-service checkouts. The application guarantees 24 hour access to the store throughout the year' 'Full self-service (no check out assistants), 'If you need, download the application, access to the store for 24/7'', 'Super. There should be more stores like this!', 'I like the opening hours 24 h.', 'A great idea, accessible for 24h. meeting customers' needs. Each store chain should follow their example. A small minus for only one self-service checkout. :)', 'A very interesting concept of a shop without shop assistants, open for 24/7. Once unthinkable, you enter the shop by yourself via a phone application and do shopping, pay and leave. Great, especially when other stores are closed', 'There was no problem with the application', 'self-service checkouts are great', 'Open for 24 hours, including Sundays, no queues', 'System of 24 hour crewless operation, awesome! At night the door is open by means of an application and easily operated check-out stands.

I like the way customers are treated! Shopping in an empty store with desired assortment and nice music in the background, pure pleasure for me! I wish there were more places like this!', 'The only advantage – open every day and I guess for 24h'. 'It's good that the door can be opened via an application!. 'This is definitely a store of the future'. 'Purchase of eco products on Sunday or at night after work – impressive!.', 'Efficient application' etc.

There were also a few negative comments. Some clients said they were not interested in installation of the application because 'they do not want to give away their personal data', statements of the type: 'What kind of idea with opening a door by an app. which calls for my photo and identity confirmation!'. 'there many personal details under protection which are not needed to confirm identity', Others were of the opinion that absence of personnel has a negative influence on the atmosphere in a shop. ('A somehow unpleasant shop – I guess there was no service at all, self- service checkouts, not too good atmosphere not encouraging to come back').

It seems that for some customers of Bio Family stores, assistance of the store personnel is indispensable. This has been confirmed by numerous positive comments of the type: 'Very kind personnel always ready to offer good advice', 'super customer service, full professionalism, very supportive', etc. Apart from the assortment offer, it was the store personnel that was the subject of comments. Further, the respondents commented on the matter of price and other factors such as cleanliness, esthetics, accessibility, parking space, etc.

6. Conclusions

It has been found, among others, that the retail trade in organic food in Poland has been undergoing similar transformations as conventional trade had gone through previously, that is, networking, centralization and internationalization. In 2021, 25% of respondents declared increased interest in a purchase of organic food products as compared to the previous year. According to PIMR report of 2021, in 2021-2026 the compound annual growth rate (CAGR) for the food market will be about 10%.

Implementation of technological innovation was assessed for a selected specialist chain store. Innovative, 24 hour, phone application based customer self-service with no personnel present (24/7) meets customers' expectations and is well rated by most of them (well and very well by 81%).

On the one hand, it provides clients with the possibility of doing shopping with assistance of a consultant when needed, and on the other hand it offers a chance for an individual, unattended purchase with the use of an application for those who avoid direct contact with other people in the time of pandemic and want to choose the product by themselves. Such a system is an option between the traditional form

of stationary retailing and online shopping. It is a response to customers' expectations including health safety in the time of pandemic.

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