2022

ORGANIZATION AND MANAGEMENT SERIES NO. 158

THE IMPACT OF THE PANDEMIC ON THE FUNCTIONING OF BUSINESS MODELS WITH AN EXAMPLE OF SELECTED FAMILY BUSINESSES

Agnieszka OCIEPA-KUBICKA

Czestochowa University of Technology, Faculty of Management, Częstochowa; a.ociepa-kubicka@pcz.pl, ORCID: 0000-0002-1736-1844

Purpose: The purpose of the study was to indicate the impact of the COVID-19 pandemic on the functioning of business models of selected companies. The analysis of the operation and direction of changes in the business model was carried out with an example of two family businesses. Conducting research on the impact of the COVID-19 pandemic on the change in business models of companies is important due to the fact that the pandemic forced changes in the operation of many plants, which could affect the functioning of the business models adopted so far. For entrepreneurs, it is important to indicate how to modify and create business models that will work in different conditions. A good business model concept not only allows the company to gain better insight into its own business, but also allows for improvements and innovations.

Design/methodology/approach: Business model analysis is based on one of the most popular business model templates, which is the Business Model Canvas. Changes in the functioning of the business model before the pandemic in 2018 and in 2021 were assessed. Nine elements of the business model were analysed, i.e. customer segments, value proposition, channels/communication, distribution, sales, customer relations, revenue streams, key resources, key activities, key partners, cost structure. The analysis was based on literature studies on the subject discussed and on the basis of data obtained during interviews with business owners.

Findings: When analysing the examples of companies and their business model, it can be concluded that the changes in the elements of the business models of the surveyed enterprises were both quantitative and qualitative. Companies have made the most changes in the following elements: key resources, key activities, key partners, cost structure. Other elements included in the Business canvas model have only partially changed, such as customer relations. During the pandemic, another important aspect was noticed in companies, related closely to employees. The lack of an employee due to illness or the lack of a replacement for such an employee generated big problems, confusion at the level of customer relations, customer contacts, contacts with partners, timeliness of production and delivery, etc. The author proposed modifications to the existing BUSINESS CANVAS MODEL by adding the "employees" element. An analysis of this additional element in the model already at the stage of creating a business model can help new companies build a stable business model that will work in difficult situations. In crisis situations, such as the Covid-19 pandemic, employers should quickly plan the division of responsibilities in accordance with the principles of safety and

prevention of infection, and make efforts to restore a normal, healthy rhythm of their company as soon as possible. Therefore, it is necessary to develop and implement new strategies and additional activities to ensure the safety and productivity of people and thus build a business-resilient company.

Practical implications: Implementation of a new business model modified by the author of the publication will help new companies build a stable business model that will work in difficult situations such as the pandemic.

Originality/value: The research is aimed primarily at owners of family businesses. The added value to the article is an attempt to identify elements of the business model that should be paid special attention to when creating new business models. The operation of business models during the pandemic requires a broader analysis and the presented research results contribute to reducing the cognitive gap in this area. Analysis of business models of the sample companies may constitute an introduction to broader research on the creation of innovative business models that will be able to work in the rapidly changing conditions of the company's environment.

Keywords: business models, family businesses, pandemic.

Category of the paper: Case study, Research paper.

1. Introduction

During the pandemic, governments around the world introduced restrictions and limitations related to the daily life of residents and business activity. Prolonged restrictions have increased the risk of a massive wave of bankruptcies and layoffs, the negative economic and social costs of which are very difficult to estimate. Social isolation has influenced the diversification of people's value system, leading to the emergence of new business models, forcing faster adaptation of some industries and enterprises to the diversified and increasingly sophisticated expectations of customers. The need to change business models or create new models is very important, because many companies are currently going through a serious crisis and want to reactivate their operations as soon as possible.

Companies were forced to re-examine their business model in order to be able to adapt it to the expectations and requirements of the customers in the new conditions. During the pandemic, supply chains were disrupted, which is why modifications to existing business models proved to be very difficult. The article focuses on the analysis of family businesses. Family businesses in our country account for 36 percent of all enterprises, generating almost a fifth of the GDP (data obtained from the Family Business Institute).

The purpose of this publication is to identify key elements of the business model with an example of a selected company and to capture key changes in the business model resulting from the pandemic (COVID-19). To analyse the business model, one of the most popular business model templates was used, namely the Business Model Canvas. Changes in the functioning of the business model before the pandemic in 2018 and in 2020 were evaluated.

The analysis was based on the concept of a business model according to A. Osterwalder and Y. Pigneur, for whom the business model describes the premises behind the way in which an organisation creates and provides value, while deriving profits from it. On this basis, A. Osterwalder developed the business model canvas as a practical and simple business model design tool that is extremely popular among business practitioners.

Nine elements of the above-described business model were analysed, i.e. customer segments, value proposition, channels/communication, distribution, sales, customer relations, revenue streams, key resources, key activities, key partners, cost structure. The analysis was based on literature studies on the subject discussed and an analysis of business models of selected two family companies from the Silesian Voivodship conducting production and trade activities.

2. Business models – theoretical approach

The term "business model" is not old. We can find interest in business models in the 1990s. However, the concept of business models is not interpreted unambiguously. According to Gajda, "the disagreement on the interpretation of the term 'business model' is due m.in to the different context in which the term is used" (Gajda, 2014). Kardas, on the other hand, suggests that "a review of the different definitions of business models indicates that the definitions of business models are very similar. Nevertheless, it still does not mean that there is no single, generally accepted definition" (Kardas, 2016). Brzóska notes, however, that "both definitions and general concepts of business models show great diversity, which seems obvious given the epistemological and ontological complexity of the issue" (Brzózka, 2009). In turn, Afuaha defines that the business model is "a set of activities that the company conducts, methods and ways of conducting them, as well as the time of their execution, to provide the customer with benefits and ensure profit" (Afuaha, 2004; Grabowska, 2019; Gajdzik, Grabowska, 2018). Another definition is presented by Doligalski, who states that "by the concept of a business model we mean a general concept of value creation in a company, taking into account the relationships between different stakeholder groups" (Doligalski, 2013).

The most well-established term is that of A. Osterwalder and Y. Pigneur, who state that "the business model describes the rationale behind the way in which an organisation creates, delivers and profits from that value produced" (Osterwalder, Pigneur, 2010). On this basis, A. Osterwalder developed the business model canvas as a practical and simple tool for designing a business model. Business Model Canvas (BMC) is a strategic management and business model starter template (https://artradarjournal.com/...). It is a visual chart consisting of nine blocks. Individual elements describe the position of the company's or product's values, infrastructure, customers and finances (table 1).

Table 1.Characteristics of the elements included in the Business Model Canvas

Element Model Business Canvas	Characteristic
CUSTOMER SEGMENT	It contains various groups of people, organisations to whom the
	activities of the project will be directed.
VALUE PROPOSITION	This is what is offered to customers, what distinguishes the company
	from what the competition offers. These are the benefits that the
	customer will receive.
CHANNELS	Channels are a way to reach the customer, how you can reach them and
	sell the product.
CUSTOMER RELATIONSHIPS	Characteristics of the relationship with the customer.
REVENUE STREAMS	Indication of how the product or service will generate revenue. It may
	vary for each customer segment.
KEY RESOURCES	The company's resources that are necessary for the functioning of
	a given business, both tangible and intangible.
KEY ACTIVITIES	The most important activities that a company needs to perform in order
	to provide added value, establish a customer relationship and generate
	revenue.
KEY PARTNERS	Business partners, without whom the business could not function, are
	usually sellers, suppliers and subcontractors.
COST STRUCTURE	All expenses incurred in connection with the functioning of the business
	model

Source: based on: Osterwalder, Pigneur, 2010.

Despite different approaches to the issue of creating and applying business models, you can find common elements in most of them. First of all, the model is perceived as a kind of a "road map" for the company, as a specific way of thinking about the company's business. Secondly, the model contains elements of operationalisation, i.e. a way of converting the concept of business into specific actions. Thirdly, the model determines how to create value for the customer. (Jabłoński, Jabłoński, 2019; Schulte, 2013; Gajdzik, Grabowska, 2018).

When analysing individual elements of business models in companies before and after the pandemic, it can be stated that the pandemic has become another determinant of a new quality of processes, phenomena and business models. This is indicated by the research conducted by many authors (Szarucki et al., 2021; Liguori, Pittz, 2020; Ritter, Pedersen, 2020; Seetharaman, 2020).

3. Methods

A case study method was used to identify changes in business models. J. Walton (1992). It is believed that this method is suitable for understanding the development of phenomena in a certain context (Yin, 2009). The framework for the prepared interview was set by the Business Model Canvas (BMC) concept (Figure 1) (Osterwalder, Pineur, 2010).

KEY PARTNERS	KEY ACTIVITIES KEY RESOURCES	· ·	ALUE POSITION	CUSTOMER RELATIONS CHANNELS	CUSTOMER SEGMENTS
COST STRUCTURE		REVENUE STRUCTURE			

Figure 1. Canvas Business Model (Osterwalder, Pineur, 2010).

The research was carried out in 2021-2022 on the basis of data obtained during interviews with the owners of two production companies operating in the Silesian Voivodship. A common feature of the analysed companies is the fact that they belong to small family businesses that started their activity in 1993.

Company A – a family business established in 1993. Since then, the Company has been developing, changing the registered office from the place of residence of the owners to the current headquarters in Koniecpol, where the production plant is located, as well as expanding the business with wholesale services in Częstochowa. In 2018, the Company changed its legal form to a limited partnership. The company's activity is based on the manufacture of its own products, i.e. workwear and sales of OHS products. The company's priority is to meet customer requirements and offer products of the highest quality. The company provides retail and wholesale services.

Company B – a company with many years of experience, dealing with the production and sales of candles and paraffin cartridges. It is a small family business. The company was established in 1993 with its registered office in Bargly, Poczesna commune. The company's priority is to meet customer requirements and offer products of the highest quality. The company provides retail and wholesale services. It cooperates with the largest manufacturers of glass containers, as well as with suppliers of the highest quality paraffins from Europe. It owns an extensive machine park, including its own production line.

The research assessed changes in the functioning of the business model before the pandemic in 2018 and in 2021. Nine elements of the business model were analysed, i.e. customer segments, value proposition, channels/communication, distribution, sales, customer relations, revenue streams, key resources, key activities, key partners, cost structure. Then, the results of research on changes in elements of business models in accordance with the Business Model Canvas structure were presented. The obtained results allowed to determine the methods of responding to the crisis caused by the COVID-19 pandemic and to assess the adjustment flexibility of the analysed enterprises. On the basis of the analysis and evaluation of the activities of companies during the pandemic, it was suggested to expand the business model with the "employees" element.

4. Results and Discussion

In order to prevent or limit the negative effects associated with the development of the pandemic and numerous restrictions as much as possible, the analysed companies undertook numerous actions to adapt to the situation on a daily basis. The problems of companies during the pandemic are indicated by the authors of numerous publications (Szarucki et al., 2021; Seetharaman, 2020). The managers of the analysed companies were most afraid of delays or interruptions in the supply of raw materials, changes in demand from customers, increased costs, difficult situation on the logistics market resulting in delays in the completion of orders or issues related to occupational health and safety. The most important actions taken by the studied companies during the pandemic are presented in Table 2.

Table 2. *Actions taken by companies during the pandemic*

Actions	Company	Reference of individual activities to BMC areas	
Information on the epidemic and the resulting threats was analysed on	A,B	Key resources	
an ongoing basis and all issues related to occupational health and		Cost structure	
safety (masks, monitoring of employee illnesses, cleaning and			
disinfection of rooms, etc.) were introduced.			
Ongoing, accurate information of all employees about possible	A,B		
changes in the organisation of work resulting from the pandemic.		Key resources	
Consultations between members of the company's management board	A,B		
were intensified, joint discussion of problems, searching for the best		Key resources	
solutions in the new reality.			
Limitation of direct contact with recipients of goods and other people,	A,B	Channels	
remote communication has been developed.		Key activities	
Remote work has been introduced in the possible extent	A,B	Key activities	
For the protection of employees, additional office space was ensured.	A	Key resources	
Possible changes in the supply of materials, stability of the supply	A,B	Cost structure	
chain were considered and analysed.		Key partners	
Possible changes in the sale of the company's products resulting from	A,B	Customer segments	
changes in consumer demand were identified and analysed.		Channels	
Possible disruptions on the part of supply and demand were analysed	A,B	Revenue streams	
and assessed on an ongoing basis.		Cost structure	
Some changes have been made to advertising and online contacts have	A	Value proposition	
been expanded.		Customer relationship	
Due to the situation, a new procedure for the distribution of clothing	A	Value proposition	
was carried out.			
All contracts were analysed, especially those whose performance had	A,B	Key partners	
become uncertain and arrangements were made with the parties to the		Key activities	
contracts in order to limit potential losses.			
Government activities were monitored on an ongoing basis and the	A,B	Revenue streams	
possibility of using aid funds was analysed, and possible financial			
support of the company was requested.			
The international situation of import and export of materials was	A,B	Key partners	
monitored, as they could have a negative impact on production and		Key resources	
trade, creating a risk of losses.			
The production and commercial offer was expanded. In response to	Α	Value proposition	
the demand, the plant additionally undertook the production and sale			
of protective masks.			

Source: own study based on an interview with business owners.

After analysing the data obtained during interviews with the owners of companies (elements included in the Business Model Canvas), it can be noticed that the pandemic unfortunately forced changes in many areas included in the Business Model Canvas. Some of the areas, such as customer relationships, have only changed partially. Fortunately, in both companies contacts with customers via email, telephone, skype, etc. were already present and functioning well. Analysing the possibilities of building and encouraging customers to build relationships through contact via, e.g. Skype, online, email, regular mail will also allow to maintain good relations, e.g. during such a difficult period of the pandemic, where direct contact for various reasons will be limited. When building business models, it is also worth analysing this area of Model Business Canvas. During the pandemic, the owners of both companies analysed customer segments, new possibilities of acquiring customers were analysed.

Channels are how we reach the customer, how we can reach them and sell the product. Here in both companies, commercial agreements for a given year or longer were valid. Therefore, when creating a business model, it is very important to reach out to customers with whom you will be able to conclude longer business contracts. The consequence of this is a relatively stable revenue structure despite the changing environment or unpredicted situations such as a pandemic.

As many authors emphasize, a very important element in the business model is the value proposition for the client (Manninen et al., 2018). Modern solutions and benefits offered to customers are the basic analysis of further elements in the business model. During the pandemic, Company A introduced changes in the value for customers, adapting production and sales to the changed demand. The plant that produced protective clothing became a mask manufacturer and a supplier of hand sanitizer. Both companies had to adjust the channels through which the products were delivered. Companies analysed and assessed possible supply and demand disruptions on an ongoing basis. The company's key resources and key activities were analysed and modified to match the situation.

Possible changes in the supply of materials and the stability of the supply chain were identified and analysed. Adjustments were made in this respect on an ongoing basis.

Although the analysed companies operate in different industries, both of them survived the crisis caused by the pandemic. A great success of both companies is to keep the business in good economic and organisational condition while maintaining continuity and stability of operations. This was possible thanks to the targeted actions of the managers and the support of the government. These companies survived the crisis primarily thanks to numerous remedial actions taken by the owners, which include:

- Quick diagnosis of a new situation.
- On-going analysis of threats to the company resulting from the pandemic.
- Monitoring and assessment of the situation in the country and internationally.
- Extensive consultations between the members of the company's management board and with cooperating companies.

 Development and implementation of changes to ensure continuity of the company's operations.

- Adaptation of production and customer service to the changing situation and current recommendations.
- Monitoring the situation in the company and responding quickly to changes.

The adoption of appropriate business models enabling a quick response to unusual threats has generated success to the analysed companies. The basis is undoubtedly the diligence, resourcefulness and creativity of business owners in such difficult conditions. It should be emphasised that the quick response and implementation of such large changes was possible thanks to good relationships between family members. In both companies, two generations work and manage the company, i.e. parents and adult children, which allowed for a broader view of the situation as well as flexible and courageous actions leading to the necessary changes.

During the pandemic, business owners were severely affected by the simultaneous absence of many employees due to illness or quarantine. Absence of an employee or the lack of a substitute for his/her role generated major problems, such as confusion at the level of customer relations, customer contacts, contacts with partners, etc., especially in small companies. There was a lack of employees handling individual roles, which slowed down and even interrupted production for a short period, especially since employees were often on sick leave for more than 14 days. In the past, such a situation has not occurred in the analysed companies on such a large scale, as emphasized by the owners. Employees were not prepared (trained) for the possibility of taking over the duties of another person.

This is why, when analysing the actions taken by companies during the pandemic and the Business Model Canvas, it is possible to suggest a modification of the above model by adding the "employees" element. (Figure 2).

EMPLOYEES							
KEY PARTNERS	KEY ACTIVITIES	V	'ALUE	CUSTOMER RELATIONS	CUSTOMER		
	KEY RESOURCES	PROPOSITION		CHANNELS	SEGMENTS		
COST STRUCTURE		REVENUE STRUCTURE					

Figure 2. Business Model Canvas after the introduced modification (own elaboration).

The change regarding the Business Model Canvas would relate already at the very beginning to the creation of a business model subjecting the company's employees to a special analysis in the following aspects:

- skills and flexibility of employees to take on new duties, in the absence of an employee, to be able to smoothly replace them in order to ensure continuity of production and supply and to ensure contact with the customer at the highest possible level;
- an analysis of the possibilities of extending training for employees in order to develop a possible change of the role in a crisis situation or to quickly start working remotely;

• providing employees with adequate health protection during a crisis situation such as a pandemic (additional social rooms, additional workstations, masks or other protective clothing, sanitizers, etc.)

Employee qualifications, the ability to adapt to a crisis situation, creativity play a huge role in creating all other elements of the Business Model Canvas. This role is also confirmed by other authors, pointing out that in the new knowledge-based economy, attention should be paid to the flexibility of employees, broad profiling while employment should be perceived as an investment (Zelek, 2003; Duczkowska-Piasecka, 2012). Without permanent, qualified employees, the company emphasises that they would not survive this difficult period.

Implementing the proposed solution in the form of supplementing the model with an element of "employees" can help new companies develop a stable business model that will work in difficult situations.

Summary

Companies must be prepared for emergency situations where they should establish or improve action plans and management systems to protect themselves against hazards.

The COVID-19 pandemic caused significant disruptions and difficulties in the functioning of many companies and even led to their collapse. On the one hand, the pandemic has changed plans of companies, made it difficult to operate, and on the other hand, it has become a driving force, contributing to the introduction of numerous changes to business models of companies. The new conditions meant that employers had to take up new challenges, e.g. to ensure health safety to their employees and customers and to create sanitary conditions at points of sale or to ensure continuity of supply and production. Numerous restrictions during the pandemic and problems have created new ideas that form the basis for implementing the necessary changes. These changes include a wide range of solutions from the creation of a website and social channels to marketing and sales. Customers were more likely to combine online shopping with shopping at physical shops. Based on the analysis of the work of the analysed companies, it should be stated that the resilience of companies and adaptation to a crisis situation depended on previous experience and long-term functioning on the market in various situations, but above all on a rapid response and expansion as well as the introduction of new activities. The owners emphasised that in such a situation it is very important to ensure communication with employees and care for people who work for a given company as well as its surroundings. To achieve these goals, company managers must develop or adapt and implement their strategies, ensuring the safety and productivity of people and thus building a business-resilient company.

Business managers were forced to transform their business models to be able to create value in new conditions. When analysing the business models of the surveyed companies, it can be stated that the changes in the elements of the business models of the surveyed companies were both quantitative and qualitative. Companies have made the most changes in the following elements: key resources, key activities, key partners, cost structure. Other elements included in the Business Model Canvas have only partially changed, e.g. customer relations. During the pandemic, another important aspect was noticed in companies, related closely to employees. Absence of an employee due to illness or lack of a replacement for his/her role as well as reduced work efficiency caused major problems. In addition, new work rooms had to be organised to maintain safe distances and new workplaces. So far, on such a large scale, such a situation has not occurred in companies, as emphasised by the owners. Most employees were not prepared (trained) for the possibility of taking over the duties of another person, which was the reason for the downtime. In addition, during a pandemic, such as Covid-19, workers were exposed to increased stress due to new procedures, increased workload or fear of losing their jobs, concerns about their own health and the health of their family. Fatigue and stress can reduce work efficiency and increase the risk of injuries and accidents at work.

Therefore, when analysing the actions taken by companies during the pandemic and the Business Model Canvas, the author suggested to modify the above model by adding the element "employees". It seems necessary to adapt Business Models to new crisis situations, taking into account the special role of employees. The experiences during the pandemic confirmed that people are the most important resource in every company. Therefore, comprehensive satisfaction of different needs of employees when compared to the usual needs and taking care of them in crisis situations constitutes the basis for proper functioning of the company. Paying more attention to good human capital management and, in particular, care for the development of team competences and good communication, additional health protection of employees are elements of creating some protection in times of crisis. On the one hand, employers should quickly identify and mitigate workplace hazards resulting from the outbreak of an epidemic and promote occupational health on the other hand, while ensuring the continuity of the company's operations in situations of increased absence of employees. In the event of an emergency, the crew should be well prepared, e.g. through regular training on procedures for prevention, readiness and response in emergency situations. This regularity may suggest that well-planned elements analysed before starting a business activity, such as: value proposition, customer segment, distribution channels, revenue structure and the new element of the business model proposed by the author, namely employees, can be a guarantee of survival and good functioning of the company even in such difficult conditions as a pandemic. It can be concluded that the analysed plants have adapted to the new difficult situation during the pandemic. They have made some changes to business models and created a "contingency plan" for such situations. Running a business requires constant observation of what is going on around you and adapting your actions to the changing expectations of the market. Efficiency in responding to these changes has a decisive impact on the success of the project. The presented research may initiate further research, which will confirm the identified ways of behaviour and response to the crisis caused by the COVID-19 pandemic.

References

- 1. Afuah, A. (2004). Business Models. A Strategic Management Approach. New York: McGraw-Hill.
- 2. Brzóska, B. (2009). Business model a contemporary form of the organisational model of enterprise management. *Organization and Management: Scientific Quarterly*, vol. 2, p. 15.
- 3. Czainska, K., Sus, A., Thalassinos, E. (2021). Sustainable Survival: Resource Management Strategy in Micro and Small Enterprises in the Rubber Products Market in Poland during the COVID-19 Pandemic. *Resources*, *10*, 85. https://doi.org/10.3390/resources10080085.
- 4. Doligalski, T. (2013). *Internet in customer value management*. Warsaw: Warsaw School of Economics Editorial Office in Warsaw.
- 5. Duczkowska-Piasecka, M. (2012). *Business model in business management*. Warsaw: Warsaw School of Economics Editorial Office.
- 6. Gajda, D. (2014). The role of innovation in business models. *Economic Studies, University of Economics in Katowice, vol. 183*, p. 61.
- 7. Gajdzik, B., Grabowska, S. (2018). Business models in enterprises 4.0 an attempt to identify the assumptions used to design new business models. *Enterprise Management Enterprise Management*, No. 21(3), pp. 2-8.
- 8. Grabowska, S. (2019). Industry 4.0 challenges for the business model. *Scientific Papers of Silesian University of Technology 2019 Organization And Management Series, No. 136*, pp. 138-144.
- 9. Jabłoński, A., Jabłoński, M. (2019). Perspectives of development of business models of enterprises strategic conditions. Warsaw: CeDeWu Sp.zo.o.
- 10. Jagiełka, K. *Value, Channel and User in Business Model Canvas*, Available online https://www.divante.com/blog/value-channel-user-business-model-canvas. 23.05.2022.
- 11. Kardas, M. (2016). Terms and types of business models. In: K. Klincewicz (ed.), Management, organizations and organising – an overview of theoretical perspectives. Warsaw: Scientific Publishing House of the Faculty of Management of the University of Warsaw.
- 12. Liguori, E.W., Pittz, T.G. (2020). Strategies for small business: surviving and thriving in the era of COVID-19. *Journal of the International Council for Small Business, No. 1(2)*, pp. 106-110.

13. Manninen, K., Koskela, S., Antikainen, R., Bocken, N., Dahlbo, H., Aminoff, A. (2018). Do circular economy business models capture intended environmental value propositions? *Journal of Cleaner Production, Vol. 171*, pp. 413-422.

- 14. Osterwalder, A., Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. New Jersey: John Wiley & Sons Inc. Hoboken.
- 15. Ritter, T., Pedersen, C.L. (2020). Analyzing the impact of the coronavirus crisis on business models. *Industrial Marketing Management, no.* 88, pp. 214-224.
- 16. Schulte, U.G. (2013). New business models for a radical change in resource efficiency. *Environmental Innovation and Societal Transitions*, vol. 9, pp. 43-47.
- 17. Seetharaman, P. (2020). Business models shifts: Impact of Covid-19. *International Journal of Information Management*, vol. 54, p. 102173.
- 18. Szarucki, M., Noga, G., Kosch, O. (2021). The impact of the COVID-19 pandemic on business models of enterprises in the SME sector in Poland. *Horyzonty Polityki*, vol. 12(40), p. 95.
- 19. What are channels in business model canvas? Available online https://artradarjournal.com/paintings/canvas/what-are-channels-in-business-model-canvas/, 23.05.2022.
- 20. Zelek, A. (2003). *Crisis management in an enterprise a strategic perspective*. Warsaw: ORGMASZ Institute of Organisation and Management.