Ekonomia — Wroclaw Economic Review 28/3 (2022)

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Acta Universitatis Wratislaviensis No 4133

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Ekonomia

Wroclaw Economic Review
28/3 (2022)

Pod redakcją
Wioletty Nowak
i Katarzyny Szalonki

Wydawnictwo Uniwersytetu Wrocławskiego

Ekonomia — Wroclaw Economic Review 28/3 (2022)

ISSN 0239-6661 (AUWr)
ISSN 2658-1310 (EWER)

Wersją pierwotną czasopisma jest wersja elektroniczna.

Wydawnictwo Uniwersytetu Wrocławskiego sp. z o.o.
50-137 Wrocław, pl. Uniwersytecki 15
tel. 71 3752474, e-mail: sekretariat@wuwr.com.pl

Contents

Anna Gardocka-Jałowiec, Katarzyna Szalonka, *Aging of the population and the quality of life* **7**

Aleksandra Wicka, Ludwik Wicki, *Differentiation of expenditure on health and life insurance in households in 2006–2020* **17**

Barbara Borusiak, Barbara Kucharska, *Pro-environmental or pro-social: Which motivation is stronger in the case of charity retailing engagement?* **37**

Iwona Czerska, *Value-based medicine as an opportunity for the Polish health care system in a post-pandemic reality on the example of selected health programs* **57**

Edyta Ropuszyńska-Surma, Magdalena Węglarz, Piotr Kubiński, *The role of networking in building a start-up business model* **71**

Michał Niewiadomski, Agata Niemczyk, Paweł Zamora, *Service turnover structures in selected Central European countries between 2015–2021: An analysis* **91**

Magdalena Daszkiewicz, *Supporting self-esteem and self-acceptance in commercial brand campaigns created during a pandemic: Social and marketing aspects* **109**

Aleksandra Sztuk, *Competitiveness of cities in the post-pandemic time: The perspectives of residents and tourists* **129**

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.1

Anna Gardocka-Jałowiec
ORCID: 0000-0003-3281-1513
University of Białystok
a.gardocka@uwb.edu.pl

Katarzyna Szalonka
ORCID: 0000-0001-7290-6408
Wrocław University of Economics
katarzyna.szalonka@uwr.edu.pl

Aging of the population and the quality of life

Date of submission: 9.09.2022; **date of acceptance:** 4.10.2022

JEL classification: J11, J14, O12, O33

Keywords: quality of life, population aging, time, health, demographic changes, medical progress, technological change

Abstract

The paper aims at presenting the quality of life in terms of the deepening population aging process conditioned (to a great extent) by the progressive convergence of technologies. The interdisciplinary, theoretical nature of the considerations is a voice in the discussion on the interpretation, place, and role of quality of life, with particular emphasis on the extension of human life as a consequence of medical development.

The authors applied the descriptive analysis method to present the category of quality of life, the phenomenon of population aging, the specificity of technological changes, and selected issues in the field of demographic changes. Polish and foreign literature on the subject was the basis for the considerations. The theoretical aspect of the research is supplemented by the empirical part supported by available secondary data published by Eurostat and Statistics Poland (Główny Urząd Statystyczny).

Poland has been in the top thirty demographically old countries in the world for many years. In 1967, it crossed the threshold of demographic old age, and in 1980 — the threshold of advanced demographic old age. The demographic forecasts of Statistics Poland indicate that the number of people in retirement age will increase, and in 2035, it will reach 26.7% of the population. The ob-

served and forecasted decline in the total population and the growth in the number of people in the senior age lead to an increase in the demographic dependency ratio of the elderly.

The convergence of technologies revealed in medicine creates a new perspective on the population aging process. Extending human life allows one to recognize that the quality of life becomes: 1. the most desirable result of all healthcare policies; 2. dependent on the change of the healthcare model, i.e., the transition from the dominant model of reactive and retrospective care to the desired proactive and prospective model.

Introduction

The aim of the considerations is to present the quality of life in the perspective of the deepening population aging process. The considerations are based on the ongoing technological change. The dynamism and scope of technology convergence has an increasing impact on the lives of human beings. Time as a component of all experience (collective and individual) as well as the measure of quantitative and qualitative change is essential in this aspect. It determines not only the pace of change in life expectancy, but also the reaction (current and future) to the demographic and technological shifts.

The present considerations are based on Polish and foreign literature on the subject. Their theoretical nature is a voice in the discussion regarding the interpretation, place, and role of the quality of life in terms of the population aging process taking place in the conditions of progressing technology convergence and its impact on human existence. The considerations are an attempt to provoke reflection on the challenges resulting from the impact of technology convergence on the population aging process.

Quality of life — the essence and the perspective

Along with the rise and development of civilization, the quality of life has become one of the elements which determine human life. Aristotle already drew attention to the human striving to obtain pleasure, satisfaction from the choices made, and well-being throughout life. Plato defined "quality" as "a certain degree of perfection," and Hippocrates saw it as the goal of medical practices, the main task of which was to provide a person with health, understood as an internal balance between the solid, fluid environment and the psyche. In philosophical concepts, the quality of life was equated with well-being defined as the difference between the sum of all pleasures and all sufferings a person experiences during their life.

There was an increased interest in the subject of the quality of life in the 20th century. Most definitions focused on its relationship to consumerism; it was believed that the higher the degree of satisfaction of needs, the better the quality of

life. The definition of health published in 1947 by the World Health Organization (WHO) (The WHOQOL Group, 1995) had the greatest impact on the extension of the understanding of the "quality of life." Since then, the interest in research on the topic has increased, and the scope of definitions has expanded to include new elements such as life satisfaction, happiness, health, emotions, and education.

Undeniably, the issue of the quality of life has been and will be important for science and public debates. Research on the subject, initiated by numerous complex research tools, based primarily on intuitive beliefs, takes an increasingly specific form, assigned to individual sciences (Zandecki, 1999; Kantowicz, 2001). For instance, sociologists deal with the quality of life in the context of styles and principles of social life, educators — values, goals, and aspirations, whereas psychologists — the sense of satisfaction and well-being (Wnuk et al., 2013, 11).

A review of the literature on the quality of life leads to the conclusion that this category has been treated as a dependent variable, which is conditioned by economic, social, psychological factors, physical state and motor skills, as well as somatic experiences. According to Ebrahim (1995), the quality of life determines the state of health, which is ruled by life expectancy and modified by physical disability, functional limitations, the way they are perceived, and the possibilities of social activity. Therefore, the study on the subject should be identified with specific problems resulting from disease and treatment as well as human activity in terms of physical, mental, social, and subjective well-being of the patient (Schipper, 1990; Guyatt, Feeny and Patrick, 1993).

Wegner, Naughton, and Furberg (1996) distinguish three aspects of the quality of life: the ability to actively participate in everyday life, the patient's feelings about their health, well-being and satisfaction with life, symptoms and their consequences, which are assessed on detailed quality scales. It is worth adding that Farquhar (1995) considers social contacts to be an equally valued component of a good quality of life, i.e., analogically to health. Walden-Gałuszko and Majkowicz (1994) define it as the assessment of a given period of life between the subject and the environment — a person assesses the quality of life by comparing it with a standard built on the basis of their own experiences or value system, and by further comparing it with the situation of other people.

Bearing in mind the above approaches, the determinants of the quality of life are presumably:

— satisfaction with life (which is subjective and may fluctuate),

— multidimensional factors (from physical health, mental state, level of independence, family, education, wealth, religious beliefs, sense of optimism, local services and transport, employment, housing, and the environment, to social relationships),

— cultural perspectives, values, personal expectations, and goals in life (decisions, dreams, desires to fulfill, which bring people closer to the feeling of happiness in life),

— physical, mental, and social well-being (not the absence of illness).

The quality of life in the face of the dynamic demographic changes observed in the world, especially in Poland, will (and in fact should) arouse more and more interest.

Population aging — the state and the perspective of the process

Population aging is a demographic process that does not take place in subjective and temporal isolation. Its unprecedented scale and intensity cover the societies of Europe and other highly developed countries in the world, and results, i.a., in extending the duration of human life.

It should be emphasized that, in the opinion of researchers, Poland is a country where the population aging will be particularly noticeable in the coming years. As predicted by Eurostat, the demographic forecast until 2100 assumes an increase in fertility for Poland and, in the long term, a positive migration balance, but these changes will not be sufficient to significantly inhibit the unfavorable transformation trends in the country's demographic structure. As a result, the aging of the Polish society is inevitable and irreversible in the next several dozen years (Okólski, 2010). Our country will become one of the oldest, and the share of the Polish population in the total population of European Union countries will be clearly decreasing (Figure 1).

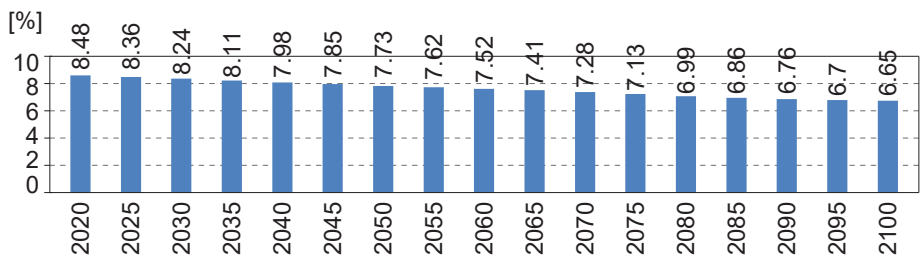


Figure 1. Population of Poland in relation to the population of EU (27 countries) in 2020–2100

Source: own study based on Eurostat data (retrieved May 15, 2022 from https://ec.europa.eu/eurostat/databrowser/view/PROJ_19NP/default/table).

In Poland, at the end of 2019, the number of people aged 60 and more exceeded 9.7 million and increased by 2.1% compared to the previous year. The percentage of elderly people in the Polish population reached 25.3%. According to the forecast of Statistics Poland, the number of people aged 60 and more in Poland in 2030 will increase to the level of 10.8 million, and in 2050 to 13.7 million. These people will constitute about 40% of the total population of Poland (Figure 2; GUS, 2021).

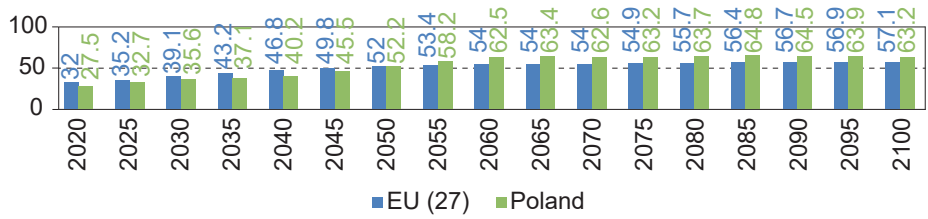


Figure 2. Demographic dependency ratio (population 65 or older to population aged 15–64)

Source: own study based on Eurostat data (retrieved May 15, 2022 from https://ec.europa.eu/eurostat/databrowser/view/PROJ_19NDBI/default/table).

The observed decrease in the total population, with the simultaneous increase in the number of elderly people, already results in growth in the demographic dependency ratio of the elderly (calculated as the number of people aged 65 and more per 100 people aged 15–64). The dynamic increase in the demographic dependency ratio for the elderly has been noticeable in Poland since 2011 (in the previous years, this indicator remained at a relatively stable level). It is worth mentioning that in 2020, the analyzed indicator at the level of 27.2 was higher by 1.1 than in the previous year (the demographic dependency indicator was 26.1) (GUS, 2021).

The dynamic increase in the number of elderly people is related to the extension of the expected life expectancy. In Poland, the average life expectancy of men by 2100 will be 88.4 years, so over 14 years longer compared to 2020. In the case of women, it will extend by an average of over 10.5 years (Table 1).

Demographic change and its consequences are closely related to time, which is the fundamental dimension and regulator of all human action in quantitative and qualitative terms. The essence of time is the tripartite – that is, the constant movement between the past, present, and past. The ongoing technological change and the convergence of technologies in medicine mean that the aging process of the society puts the considerations on the quality of life in a new light.

Table 1. Life expectancy of men in Poland in 2100 compared to 2020

Men					
2100			2020		
1.	Liechtenstein	89.9	1.	Liechtenstein	82.3
2.	Switzerland	89.8	2.	Switzerland	82.0
3.	Spain	89.7	3.	Italy	81.3
4.	Italy	89.6	4.	Norway	81.3
5.	Malta	89.6	5.	Iceland	81.2
6.	Iceland	89.6	6.	Sweden	81.2
7.	Ireland	89.5	7.	Spain	81.1
8.	France	89.5	8.	Ireland	80.8
9.	Luxembourg	89.5	9.	Cyprus	80.8
10.	Norway	89.5	10.	The Netherlands	80.6
11.	Greece	89.4	11.	Malta	80.5
12.	Sweden	89.4	12.	Luxembourg	80.2
13.	Belgium	89.3	13.	France	80.0
14.	Cyprus	89.3	14.	Austria	79.7
15.	The Netherlands	89.3	15.	Belgium	79.6
16.	Austria	89.3	16.	Denmark	79.4
17.	Finland	89.2	17.	Finland	79.3
18.	Denmark	89.1	18.	Greece	79.1
19.	Germany	89.1	19.	Germany	79.1
20.	Slovenia	89.1	20.	Slovenia	78.6
21.	Portugal	88.9	21.	Portugal	78.6
22.	Czechia	88.5	22.	Czechia	76.5
23.	Estonia	88.4	23.	Croatia	75.3
24.	Poland	88.4	24.	Estonia	74.5
25.	Croatia	88.2	25.	Slovakia	74.3
26.	Slovakia	88.2	26.	Poland	74.2
27.	Romania	88.1	27.	Hungary	73.0
28.	Hungary	88.0	28.	Romania	72.1
29.	Lithuania	87.7	29.	Bulgaria	71.7
30.	Bulgaria	87.6	30.	Lithuania	71.1
31.	Latvia	87.6	31.	Latvia	70.5

Source: own study based on Eurostat data (retrieved May 15, 2022 from https://ec.europa.eu/eurostat/databrowser/view/proj_19nalexp/default/table?lang=en).

Table 2. Life expectancy of women in Poland in 2100 compared to 2020

Women					
2100			2020		
1.	Spain	93.7	1.	Spain	86.6
2.	France	93.7	2.	Liechtenstein	86.4
3.	Liechtenstein	93.5	3.	France	86.2
4.	Luxembourg	93.4	4.	Switzerland	85.8
5.	Italy	93.3	5.	Italy	85.7
6.	Switzerland	93.3	6.	Cyprus	85.0
7.	Malta	93.2	7.	Luxembourg	84.9
8.	Ireland	93.1	8.	Finland	84.8
9.	Slovenia	93.1	9.	Portugal	84.7
10.	Belgium	93.0	10.	Sweden	84.6
11.	Greece	93.0	11.	Norway	84.6
12.	Portugal	93.0	12.	Ireland	84.5
13.	Finland	93.0	13.	Malta	84.5
14.	Iceland	93.0	14.	Slovenia	84.5
15.	Estonia	92.9	15.	Iceland	84.4
16.	Austria	92.9	16.	Belgium	84.3
17.	Sweden	92.9	17.	Greece	84.3
18.	Norway	92.9	18.	Austria	84.3
19.	Cyprus	92.8	19.	Germany	83.7
20.	Germany	92.7	20.	The Netherlands	83.6
21.	The Netherlands	92.7	21.	Denmark	83.3
22.	Poland	92.7	22.	Estonia	83.1
23.	Denmark	92.6	23.	Czechia	82.3
24.	Czechia	92.4	24.	Poland	82.1
25.	Slovakia	92.4	25.	Croatia	81.6
26.	Lithuania	92.2	26.	Slovakia	81.1
27.	Hungary	92.2	27.	Lithuania	80.9
28.	Romania	92.2	28.	Latvia	80.1
29.	Croatia	92.1	29.	Hungary	79.9
30.	Latvia	92.1	30.	Romania	79.5
31.	Bulgaria	91.6	31	Bulgaria	78.9

Source: own study based on Eurostat data (retrieved May 15, 2022 from https://ec.europa.eu/eurostat/databrowser/view/proj_19nalexp/default/table?lang=en).

Technological dimension of the progressive population aging process as a challenge to the quality of life

The average human life expectancy is systematically increasing with the progress of civilization. Life expectancy has doubled in two centuries. In the 1850s, the average life expectancy was 48 years, and in 2020, it was 72 years (Eurostat, 2022). Undoubtedly, this change is marked by, i.a., the development of treatment methods and strategies, universal access to healthcare and the quality of its services, lifestyle with particular emphasis on diet, addictions and physical activity, and the degree of environmental contamination.

The observed increase in life expectancy is accompanied by change in the social and economic environment. We are currently living in a globalized world where changes are characterized by exponential (not linear) growth. Developing technologies are converging and their combined impact triggers further changes (e.g., increasing access to information, methods, and tools for obtaining financial resources for business activity or meeting consumer needs, as well as saving time and increasing opportunities for professional activity).

Bearing in mind the essence of technological change, the extension of human life should be combined with the ongoing development of genetics. The research on DNA brings scientists closer and closer to the essence of genetic instability responsible for genetic defects and diseases. It is equally important, however, to search for effective treatment methods, new drugs, and to identify the so-called point of therapeutic intervention, i.e., the target site of action of a given medicine (Diamandis and Kotler, 2021, 236).

The aforementioned areas of activity are conditioned by the ongoing technological change and technology convergence. As Diamandis and Kotler (2021, 221) point out:

> every step in medical therapy changes. In the *front end* area, the convergence of sensors, networks and artificial intelligence turns medical diagnostics upside down. In the intermediate tier, robotics and 3D printing are changing the nature of medical procedures. In the back *ended area*, artificial intelligence, genomics and quantum computers are transforming the medicinal products themselves.

Undoubtedly, science is getting closer to extending the life of an individual. In 2018, Ray Kurzweil, technologist, supporter, and promoter of the idea of "escape velocity into longevity" (Gray, 723–726), stated that in 10–12 years, human life expectancy would increase faster in relation to technological changes (extending by over a year each year; Koulopoulos, 2019). Thus, humanity faces the possibility of gaining several dozen more years of life, and therefore influencing the pace of change in the world.

In view of these statements, ensuring the quality of life in an aging population takes on a new dimension. Leading the way is the change in the care model, i.e.,

the shift from a reactive, retrospective system to a proactive and prospective one. The transition from the patient care model to the health care model is due to the dynamically occurring technological change. Even now, human beings are able to monitor their own health at home and react to any deviations from the norm. Products offered in the market equipped with internal and external sensors (e.g., monitoring bands, smartphones, smart watches, toothbrushes) are able to determine the parameters of the body (e.g., sugar level, blood oxygenation, heart rate). Additionally, a follow-up with a complete picture of human health is becoming available, such as full genome sequencing, body magnetic resonance imaging, computed tomography, echocardiogram, and various clinical blood tests. The combination of constant health monitoring at home with a comprehensive checkup makes it possible to quickly diagnose health problems which require medical intervention and to identify a previously undiagnosed disease. Time is crucial in this regard, and the period between the appearance of the disease and being able to detect its first symptoms is shortened.

Conclusions

The progressing population aging, the prolongation of human life due to technological change, and the convergence of technologies make the quality of life possibly the most desirable result of all healthcare policies. Time is crucial here — it is not only a condition for change, a dimension and regulator of all human action, but also, most importantly, it is a component of all experience (collective and individual) as well as a measure of quantitative and qualitative change. Extending human life should be accompanied by healthcare (proactive and prospective model). Only then will a longer healthy life contribute to people's productivity, will to inspire, create innovative solutions and set new expectations. Creating the conditions for a higher quality of life from in terms of physical and mental health is a challenge facing humanity.

References

Diamandis, P.H., Kotler, S. (2021). *Przyszłość jest bliżej, niż nam się wydaje. Jak konwergencja technologii radykalnie zmieni biznes, przemysł i nasze życie*. Warszawa: Poltext.

Ebrahim, S. (1995). Clinical and public health perspectives and applications of health-related quality of life measurement. *Social Science & Medicine*, 41(10), 1383–1394. DOI: 10.1016/0277-9536(95)00116-o.

Farquhar, M. (1995). Definitions of quality of life: A taxonomy. *JAN Leading Global Nursing Research*, 22(3), 502–508. DOI: 10.1046/j.1365-2648.1995.22030502.x.

Farquhar, M. (1995). Elderly people's definitions of quality of life. *Social Science & Medicine*, 41(10), 1439–1446. DOI: 10.1016/0277-9536(95)00117-p.

Felce, D., Perry, J. (1995). Quality of life: Its definition and measurement. *Research in Developmental Disabilities*, 16(1), 51–74. DOI: 10.1016/0891-4222(94)00028-8.

Gray, A.D.N.J de. (2004). Escape velocity: Why the prospect of extreme human life extension matters now. *PLOS Biology*, 2(6), 723–726. DOI: 10.1371/journal.pbio.0020187.

GUS. (2021). *Sytuacja osób starszych w Polsce w 2020*. Warszawa-Białystok: Główny Urząd Statystyczny.

Guyatt, G.H., Feeny, D.H., Patrick, D.L. (1993). Measuring health-related quality of life. *Annals of Internal Medicine*, 118(8), 622–629. DOI: 10.7326/0003-4819-118-8-199304150-00009.

Kantowicz, E. (2001). Pedagogika społeczna wobec kwestii jakości życia. *Pedagogika Społeczna*, 1, 103–117.

Kurzweil, R. (19.01.2018). *According to Peter Diamandis and Ray Kurzweil, These Are the Most Dangerous and Disruptive Ideas*. [Interview by T. Koulopoulos]. Inc.com. Retrieved July 20, 2022 from https://www.inc.com/thomas-koulopoulos/according-to-peter-diamandis-ray-kurtzweil-this-is-how-you-build-future.html.

Okólski, M. (2010). Wyzwania demograficzne Europy i Polski. *Studia Socjologiczne*, 199(4), 37–78.

Rybczyńska, D. (1998). *Jakość życia młodzieży z rodzin ubogich*. Zielona Góra: WSP.

Schipper, H. (1990). Quality of life: Principles of the clinical paradigm. *Journal of Psychosocial Oncology*, 8(1–3), 171–185. DOI: 10.1300/J077v08n02_09.

Walden-Gałuszko, K. de, Majkowicz, M. (1994). *Jakość życia pacjentów z chorobą nowotworową — badanie własne*. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.

Wegner, N.K., Naughton, M.J., Furberg, C.D. (1996). Cardiovascular disorders. In B. Spilker (ed.), *Quality of Life and Pharmacoeconomics in Clinical Trials* (883–891). Philadelphia-New York: Lippincott-Raven.

The WHOQOL Group. (1995). The World Health Organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. *Social Science & Medicine* 41(10), 1403–1409. DOI: 10.1016/0277-9536(95)00112-K.

Wnuk, M., Zielonka, D., Purandare, B., Kaniewski, A., Klimberg, A., Ulatowska-Szostak, E., Palicka, E., Zarzycki, A., Kaminiarz, E. (2013). Przegląd koncepcji jakości życia w naukach społecznych. *Hygeia Public Health*, 48(1), 10–16.

Zandecki A. (1999). *Wykształcenie a jakość życia: dynamika orientacji młodzieży szkół średnich*. Toruń-Poznań: Edytor.

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.2

Aleksandra Wicka
ORCID: 0000-0001-7713-4953
Warsaw University of Life Sciences
aleksandra_wicka@sggw.edu.pl

Ludwik Wicki
ORCID: 0000-0002-7602-8902
Warsaw University of Life Sciences
ludwik_wicki@sggw.pl

Differentiation of expenditure on health and life insurance in households in 2006–2020

Date of submission: 10.08.2022; **date of acceptance:** 4.10.2022

JEL classification: D14, I13

Keywords: health insurance, households, insurance expenditure

Abstract

Along with the growing wealth of society, the demand for insurance, including health insurance, increases. In recent years, there has been significant interest in insurance products which guarantee access to private healthcare facilities. The waiting time for an appointment with a specialist is shorter than in public institutions, and such insurance offers quick diagnostics and high-quality services.

The study aimed to determine the level and differentiation of health insurance expenditure in various types of households and its share in total insurance expenses. From 2006 to 2020, as shown by statistics, the highest expenditure on health insurance was recorded in the households of non-manual workers (PLN 19.72 per person per year on average) and the lowest — in farmers' families (8.85 per person per year on average). The indicator of the diversification of insurance expenditure structures for the surveyed households calculated for 2020 showed that farmers' households had a significantly different (various) structure of expenditure on insurance than that observed in other types of households (total $v_{pq} = 0.96$).

Introduction

Expenditure on commercial insurance, both for life and other personal and property insurance, depend on many economic and non-economic factors. The more important determinants include consumer income (Wicka, 2021; Piekut, 2018), consumer insurance awareness (both secondary and primary; Szromnik, 1998a, 1998b, 2001), attitude to time (Maison, 2013), and wealth. The level of disposable income is a factor which influences the standard of living and consumption, but it is not a determinant of household wealth (Perenc, 1998, 2004). Wealth is evidenced by the share of expenses in relation to income. The higher it is, the lower the wealth, since a smaller part of funds can be spent on savings or investments.

The citizens of each country bear private health expenditures. In low- and middle-income countries, along with the increase in the national wealth, the amount of expenditure, mainly from public funds, also increases (Hooley, Afriyie, Fink and Tediosi, 2022). Interestingly, the authors found that spending on health is usually not correlated with having private health insurance — patients may simply cover such expenses directly from household budgets. Nevertheless, private health insurance is popular worldwide, especially in countries where minimal state interference in offering health services is assumed. An important concern in some countries is that private insurance produces a "two-tier" system where patients with higher incomes obtain faster or "better" healthcare than those with lower incomes. While private insurance would likely facilitate faster access to medical treatment were it legal there, it would also likely reduce wait times for patients who rely solely on public insurance, as the patients with private insurance would rely more on resources funded by private insurers and less on ones provided by the government. For example, Canada, where private insurance is not allowed, has the longest wait times for medical services among all high-income countries. There is no consistent evidence that allowing private insurance markets in rich countries results in poorer healthcare outcomes for patients who rely solely on public insurance (Globerman, 2020).

In the USA, where private health insurance is dominant, 80% is employer-sponsored (Wray, Khare and Keyhani, 2021). However, many studies show that people with private health insurance still choose public care, especially in hospital treatment. This is particularly true for younger people and patients without long-term health conditions, which shows that public care is perceived as more reliable and cheaper (Rana, Alam and Gow, 2020). Other studies have found that private health insurance is more likely to be purchased by people with higher education, higher income, and chronic diseases. This means that private insurance is treated as additional, providing additional healthcare or reimbursements for some medical services or costs which are not covered by the National Health Insurance (Hur and Kwon, 2019; Jung, Kwon and Noh, 2022), and in the absence of such insur-

ance, the majority of patients reported unmet medical experience (Lee, 2019). In China, the share of private health insurance premiums increased from 0.2 to 1.4% between 2000 and 2014, but this faced a supply barrier, and private insurance beneficiaries were found to limit their utilization of healthcare services (Wu, Li and Ercia, 2020). It also resulted from the development of public health insurance. Private health insurance is used to provide additional care to the insured. In cases of significant (catastrophic) health expenditures, it does not work, and the most significant burden is placed on public insurance (Jung et al., 2022). There are also reports, e.g., from Korea or Australia, that private health insurance protects households from catastrophic health expenditure, especially for elderly persons and persons with more significant health care needs (Lee and Yoon, 2019). In addition, such insurance can provide better care for chronic diseases (Sriravindrarajah et al., 2020). An important factor in health insurance is people's individual approach to risk, including health risk in a given country (Wicka and Świstak, 2017).

The results of studies on private health insurance were not always conclusive. For example, in the US, patients perceived the level of service for private health insurance as lower than for public insurance (Wray, Khare and Keyhani, 2021). This was the respondents' opinion, although other studies found that prescribing certain medical services to patients in the public health service was up to three times less frequent than in the private sector (Fourquet et al., 2019). Literature review shows that the importance and perception of private health insurance depends significantly on the organization of social insurance in a given country and the level of public health insurance spending. There is no uniform assessment of this phenomenon.

International insurance companies began to offer their services in Poland on a larger scale after Poland acceded to the EU. It was also private voluntary health insurance, which was of little importance in the health insurance system of most OECD countries (Owoc, 2009). It did not matter to the general level of healthcare in a given country, but it increased the availability of medical services (Prędkiewicz, 2014). This is due to, among other things, the fact that having such insurance is often associated with the risk of excessive, unjustified use of medical services, which may result in higher costs (Laskowska, 2015). In Poland, it was believed that private health insurance should be allowed, despite it potentially leading to inequalities in access to healthcare. It was assumed that it will obtain a negligible market share due to the high level of public spending (Jurkiewicz and Trinardon, 2010; Jurkiewicz-Świętek, 2012; Płonka, 2017) and that private health insurance would replace direct private healthcare expenditure (Więckowska and Osak, 2010). However, no studies present long-term changes in private health insurance in Poland. This study aims to fill this gap — it includes both information on the overall share of these types of insurance and information on their use by various groups of households.

The pursuit of satisfying needs, including insurance ones, depends on the financial situation of households. Their activity in the insurance market depends on various factors, including:

— macroeconomic ones: inflation, unemployment, wage levels, interest rates, dynamics of GDP growth, economic situation, legal regulations, etc.;

— microeconomic ones: household size, education, income, place of residence, consumption model, or life priorities (Garczarczyk, Mocek and Skikiewicz, 2014).

After 2015, the financial situation of households in Poland was systematically improving. They achieved higher income (Table 1) and a higher surplus of income over expenditure (Figure 1). They also functioned in larger apartments, better equipped with durable goods (GUS, 2021a).

Table 1. The level of revenues and expenditures in nominal and real terms in 2006–2020

Years	Nominal income in PLN / person / month	Real income (prices 2020) in PLN / person / month	Nominal expenditures PLN / person / month	Real expenditures (2020 prices) PLN / person / month
2006	835	1116	744.81	995.47
2007	929	1211	809.95	1056.13
2008	1046	1308	904.27	1131.59
2009	1114	1347	956.68	1156.69
2010	1193	1406	991.44	1168.34
2011	1227	1386	1015.12	1146.93
2012	1278	1393	1050.78	1144.86
2013	1299	1403	1061.70	1146.44
2014	1340	1447	1078.74	1164.84
2015	1386	1510	1091.19	1188.99
2016	1475	1616	1131.64	1240.50
2017	1598	1718	1176.44	1264.33
2018	1693	1791	1186.86	1255.44
2019	1819	1881	1251.73	1294.29
2020	1919	1919	1209.58	1209.58

Source: Own study based on the Statistics Poland data.

The average monthly disposable income per person in 2020 was PLN 1,919, and in real terms, it was higher by 72.0% than in 2006. The increase of income in the analyzed period occurred in all types of households. The average monthly expenses per person in 2020 amounted to PLN 1,209 and were in real terms 21% higher than in 2006. In the years 2006–2020, a decrease in the share of expenses in income was recorded. It dropped from over 89% in 2006 to 63% in 2020 (26 percentage points). This is a positive phenomenon, as it shows the growing impor-

tance of accumulation and a rising standard of living. It is possible to increase savings from current income. These trends are consistent with the changes occurring in countries with a high level of development (Borowska, Mikuła, Raczkowska and Utzig, 2021; Świecka and Musiał, 2016).

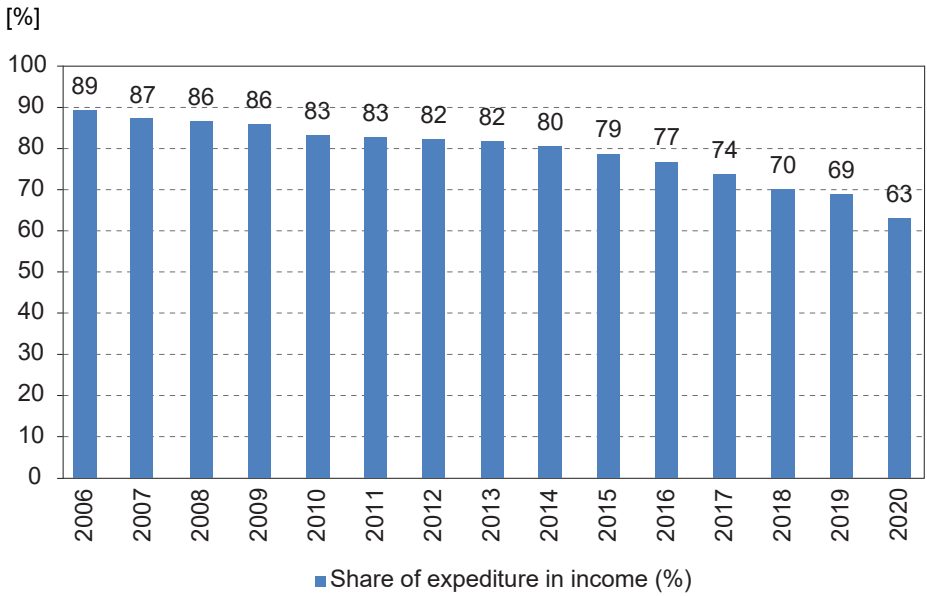


Figure 1. Share of expenditure in disposable income (real approach, 2020 prices) in 2006–2020

Source: own study based on Statistics Poland data.

According to Statistics Poland (SP), in 2020, a large variation in average monthly income and expenditure was observed between different types of households (GUS, 2021b). As in the previous years, the highest average monthly disposable income per capita, and the highest average monthly expenses per capita were recorded in the households of self-employed persons. In this group of households, both income and expenditure were higher by 16.6% and 16.8%, respectively (in 2019, by 19.5% and 17.6%). In 2020, the households of disability pensioners had the lowest average monthly disposable income per person — PLN 1,522, which was 20.7% lower than the average (17.7% lower in 2019). The lowest average expenditure per person was recorded in farmers' households (PLN 840), which were 30.6% lower than the average expenditure for households in general (in 2019 — 27.0% lower).

Research methodology

The aim of the research is to determine the level of expenditure on health insurance in Poland for households of various socio-economic types. Such an ap-

proach makes it possible to identify changes in total health insurance expenditure and indicate how the demand for it differs between households.

The study uses the data published by the Polish Chamber of Insurance (PIU) and Statistics Poland (SP) in the studies of household budget for a relatively long period: 2006–2020 — which should facilitate observing the dynamics of development in the analyzed market. The importance of private health insurance in other countries has been growing over at least a dozen years. In a shorter period, random changes can strongly disrupt the trend observation. In SP studies, insurance expenditure is categorized as follows:

1. Life insurance — life insurance including additional insurance options.
2. Insurance related to living and habitation.
3. Health insurance (private) — accident and sickness insurance.
4. Transport-related insurance (GUS, 2021b).

Due to the subject of the paper, the focus was put on private health-related insurance, i.e., one indicated in point 3.

The data from the following types of households, distinguished according to the socio-economic criterion, were used to study the level and differentiation of health insurance expenditure:

1. self-employed,
2. farmers,
3. workers in blue-collar positions,
4. employees in non-manual positions,
5. retirees and disability pensioners (total).

The following indicators were applied for the data analysis: structure of insurance expenditure, and the share of health-related insurance expenditure in total insurance expenditure. For total insurance expenditure, the rate of changes was determined with the use of the linear function of trend. The level of expenses is set in PLN per person per year. The values were referenced to 2020 prices using the price index of goods and services (inflation).

The diversification of insurance expenditure structures was calculated for 2020 using the expenditure structure diversification index described by the formula:

$$V_{pg} = \frac{1}{2}\sum_{i=1}^{k} |\beta_{ip} - \beta_{iq}|$$

where β_{ip}, β_{iq} denote, respectively, the share of the i-th structure component in the p-th and q-th type of households (k is the number of distinguished structure components, i.e., groups of expenses). Certainly, the components β_{ip}, β_{iq} satisfy the relation $0 \leq \beta_{ip} \leq \Sigma_{i=1}^{k} \beta_{ip} = 1$. The measure takes a value in the range [0;1]. When the compared structures are identical, then $v_{pg} = 0$. The increasing structural differences are accompanied by the increase of v_{pg} up to unity (Walkosz, 2009). On the basis of individual v_{pg} indices, the total expenditure diversification index was

estimated. With the use of this indicator, it is possible to determine to what extent the structure of insurance expenditure in a given type of household differs from that in other types.

Private health insurance and its importance in the healthcare system

Health insurance is a service aimed at protecting and maintaining health, as well as treating emerging ailments. The insurance model is historically the oldest system of financing healthcare, and its main source of financing are premiums paid by entities covered by compulsory health insurance (Wielicka, 2014).

In Poland, health insurance of employees is compulsory (the so-called Bismarck model). A feature of this model is financing the healthcare sector from obligatory health contributions paid by the employer and the employee. The Bismarck model assumes the existence of health insurance institutions. Elements of this system can be identified in such countries as: Germany, Austria, Belgium, France, the Netherlands, Poland, and Switzerland (Sobieski, 2020).

There are currently two main types of health insurance in Poland:

1. compulsory health insurance — public insurance based on monthly contributions to a public fund,

2. voluntary health insurance — i.e., private health insurance which can be financed either from the funds of the person concerned by the protection itself or, for example, by the employer as a non-wage benefit.

Private health insurance may play various roles in healthcare systems of different countries. They can be the basis when there is no public system, but also complement the public system or appear in parallel (PIU, 2013). Due to its functions, private health insurance can be divided into:

1. substitution insurance — the purpose of which is to provide healthcare to people excluded from the public healthcare system or to those who resign from it, provided they take out private insurance that meets at least the standards of the public one. This type of insurance is offered, for instance, in Portugal;

2. complementary insurance — provides coverage of costs resulting from the use of benefits which are not reimbursed from public funds, and coverage of statutory fees for partially reimbursed benefits. Such health insurance functions, e.g., in Belgium;

3. supplementary insurance — its aim is to provide a higher standard of medical services than that offered by the public system. It is a voluntary insurance, the purchase of which does not exempt from the obligation to participate in the costs covering functioning of the public health service. This is the case for additional health insurance in Poland;

4. basic insurance — provides citizens with access to medical care in a situation where the state does not organize it as a public system. This, for instance, concerns health insurance in the USA.

Despite the systematic increase in funds allocated to health care, access to health care, in the opinion of the Poles, is too small and dissatisfaction with the functioning of the system persists. According to Statistics Poland, in 2020, current public and private spending on health care amounted to PLN 165.7 billion. To compare, in 2019, expenditure on health care amounted to over PLN 147 billion, of which nearly 29% was private expenditure (29.7 billion was direct expenditure of households; GUS, 2019). Compared to 2006, there was a significant increase in these expenses. At that time, they were two times lower (Table 2).

Table 2. The main items from the National Health Account 2006 and 2019

Healthcare expenditure category	In bln PLN		Dynamics (2006 = 100)
	2006	2019	
Total healthcare expenditure	62.057	147.839	238
Public expenditure	42.968	106.114	247
Private expenditure, including	19.089	41.725	219
household direct expenditure	16.821	29.702	177

Source: Own study based on SP data (GUS, 2007; 2020).

An increase in expenditure on health care from public funds and contributions does not translate into an improvement in the opinion on the quality of these services. According to the data from CBOS public opinion polls (CBOS, 2021), two out of three respondents were dissatisfied with the operation of health service in Poland. The weakest points are: little access to effective prophylaxis, limited access to specialists and diagnostic tests. The health debt created in this way, according to some, increased significantly during the COVID-19 pandemic (PIU, 10.02.2021).

Healthcare in Poland is partly co-financed by private citizens. This is demonstrated both by the data of the Statistics Poland (health expenses, health insurance expenses) and data from entities offering private medical services (e.g., Luxmed, Enelmed, Medicover) and insurers selling private health insurance.

It is believed that in Poland, private health insurance serves not only to ensure access to a comfortable medical service. In a situation where the waiting time for visits not only to specialists, but also to primary care physicians is significantly longer and many rehabilitation services are expected to take several months, more and more often private insurance or spending on health replaces the public health service. However, it is connected with higher expenses. In addition to paying the obligatory health insurance contribution, one should pay expenses for a medical package (PLN 150–300) or for additional health insurance (about PLN 100–300 per month). One can also pay for private doctor visits or specific treatments, often PLN 200 or more per visit, depending on the specialization.

Private health insurance can be purchased from an insurer offering such products, chosen by an individual or their employer. Agreements are usually signed for a year, and the amount of the premium paid depends, i.a., on the scope of protection offered under the policy. Private health insurance usually covers:

— medical insurance — outpatient treatment,

— hospital insurance — hospitalization in a facility with a higher standard or in a private hospital,

— medical treatment insurance — reimbursement of costs resulting from treatment.

Private health insurance is bought by the Poles increasingly often. According to the data collected by the Polish Chamber of Insurance, in 2021, 3.7 million people had health insurance policies. For comparison, it was 3.1 million in 2020. During the year, the value of the private health insurance market increased from PLN 665 million to PLN 760 million. As Redmerska (2022) notes, private health insurance covers more and more people, also from outside large cities, and packages which include access to primary care physicians and several specialist doctors are gaining popularity. The main reason for purchasing such policies is their relatively low price, easier access to a general practitioner, as well as faster diagnostics than in the public health service. The enrichment of the health insurance offer with services related to primary healthcare, consultations with internists and pediatricians was a response to the changing needs of consumers in an epidemic situation (PIU, 10.02.2021).

For several years, the health insurance market has seen a steady increase in sales of group policies. According to the PIU data (10.02.2021), the share of group health insurance in the entire insurance portfolio exceeds 75%. Most of the policies owned by the Poles are benefits financed partially or entirely by employers (PIU, 8.04.2019). However, there has been an increase in the number of people who pay for health insurance themselves, even though it is still merely a fraction of all customers. This results in the inability to comprehensively diagnose the growth of the health insurance market only on the basis of data from individual consumers, obtained, for instance, in household budget surveys.

Changes in household expenditure on health-related insurance and its share in insurance expenses

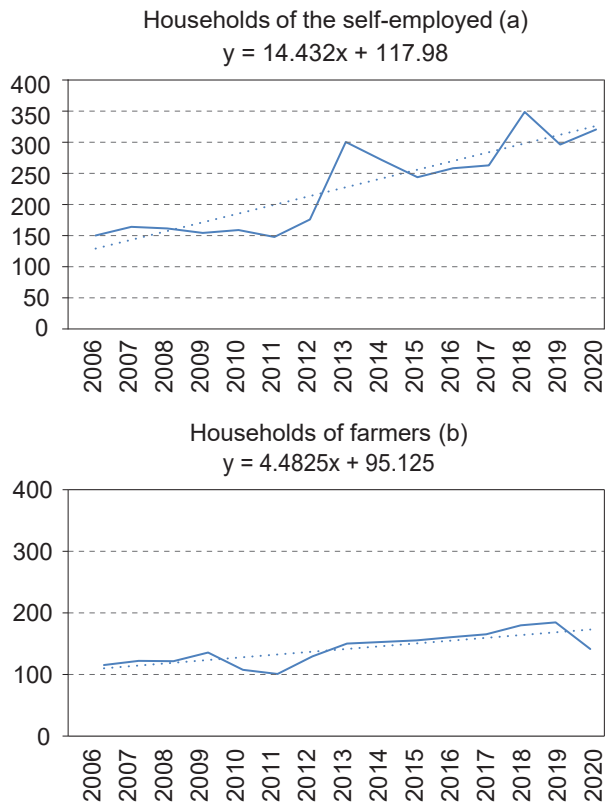
The literature on the subject presents various criteria for the division of households. These criteria may be, for instance, biological, related to the level of education or place of residence. In this paper, households were categorized in terms of the socio-economic groups they belong to, in line with the classification used in the *Households Budget* publication (GUS, 2018b). Decisions related to the purchase of insurance, saving, investing, spending, and crediting are of interest to broadly

understood household finances. The decisions in this area are influenced not only by the level of income, but also by the financial management itself, which results from financial education. Households are significant players in the financial services market, including insurance (Campbell, 2006; Swart, 2007; Garman, Hampshire and Krishnan, 2008; Garman and Forgue, 2014) — but not every insurance group.

In the years 2006–2020, total expenses for the purchase of insurance varied depending on the type of household. On average, the largest amount of money was spent on purchasing insurance per capita in the households of non-manual workers (over PLN 266), then in self-employed households (PLN 233), and the least in the households of blue-collar workers (PLN 119).

The trend function was used to assess the growth rate of total insurance expenditure in households. The average real expenditure growth rate was annually:

a) PLN 14.43 — for the self-employed,
b) PLN 4.48 — for farmers,
c) PLN 8.79 — for workers employed in blue-collar positions,
d) PLN 12.09 — for employees working in non-manual positions,
e) PLN 15.21 — for retirees and disability pensioners.



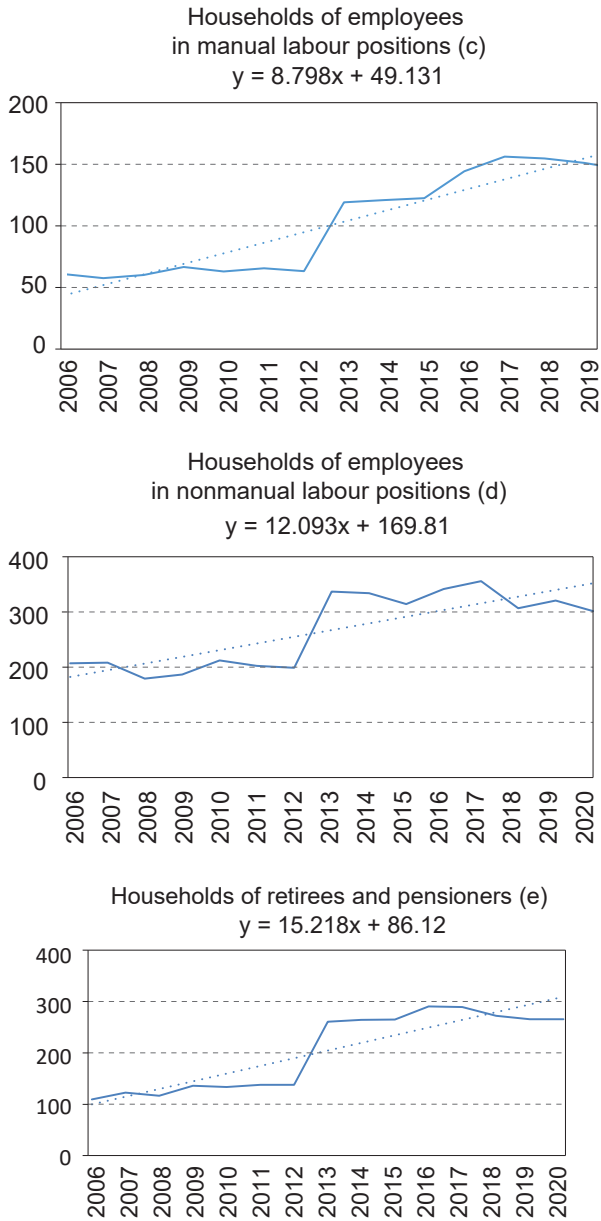


Figure 2. Tendency of total insurance expenses (real expenses, 2020 prices) in households by socio-economic type in 2006–2020

Source: Own study based on SP data.

Health insurance is separated as one of the four categories of insurance-related household expenditure reported by the Statistics Poland. In the years 2006–

2020, health insurance expenses varied significantly depending on the type of household (Table 3).

Table 3. Realized level of household expenditure on health-related insurance (prices in 2020) in PLN annually per person

Years	Households of the self-employed	Households of farmers	Households of employees in manual labor positions	Households of employees in non-manual labor positions	Households of retirees and pensioners
2006	16.84	11.87	20.69	31.60	12.35
2007	14.86	12.52	16.59	29.89	12.67
2008	17.72	12.76	15.77	26.73	13.36
2009	16.10	10.16	14.80	22.20	13.35
2010	16.69	8.77	13.86	24.61	10.61
2011	15.05	7.59	12.34	21.56	12.34
2012	14.51	8.24	12.16	22.36	10.20
2013	17.23	10.24	11.14	19.70	11.27
2014	13.48	9.72	11.66	19.83	11.66
2015	16.34	9.94	10.72	20.01	12.55
2016	13.81	8.29	9.87	10.26	4.87
2017	13.67	4.64	9.93	11.74	6.32
2018	12.19	7.62	6.22	10.79	6.47
2019	13.03	4.72	6.08	14.15	6.20
2020	10.56	5.64	5.76	10.44	5.88

Source: Own study based on SP data.

The highest level of expenditure on health insurance in all the analyzed years was recorded in non-manual workers' households. On average, it was over PLN 19 per person per year; the highest amount was observed in 2006 (over PLN 31 per person per year), the lowest — in 2016 (around PLN 10). Among the groups of households, farmers spent the least on health insurance — the average in this case was over PLN 8, which was more than two times less than the amount spent by households for non-manual workers. In farmers' households, the highest expenses were incurred in 2008 (over PLN 12 per person per year), and the lowest — in 2019 (PLN 4.7). There was a volatility in the level of health insurance spending over the analyzed 15 years. In order to determine the change by type of household, the range was calculated (Table 4).

Table 4. Breakdown of health insurance expenditure in 2006–2020 by the type of a household (in PLN per person per year)

Specification	Households of the self-employed	Households of farmers	Households of employees in manual labor positions	Households of employees in non-manual labor positions	Households of retirees and pensioners
Mean	14.81	8.85	11.84	19.72	10.01
Minimum	10.56	4.64	5.76	10.26	4.87
Maximum	17.72	12.76	20.69	31.60	13.36
Range	7.16	8.12	14.93	21.34	8.50

Source: Own study based on SP data.

The largest differences between the highest and the lowest level of expenditure on health insurance in the analyzed years occurred in the households of non-manual workers (PLN 21.34), and the lowest in self-employed households (PLN 7.16). Households of employees holding non-manual workers are also households allocating the largest sums for the purchase of insurance in the analyzed years in general.

In the years 2006–2020, the share of expenditure on health insurance in the total expenditure on the purchase of insurance in individual types of households changed. The data illustrating this issue is presented in Table 5. The most important item in the structure of household insurance expenses, both in 2006 and 2020, was transport-related insurance (including third party liability insurance for motor vehicle owners). Their share in total expenditure on insurance exceeded 40%, and even 60% in households of farmers and the self-employed (GUS, 2007, 2021). Another important item in the total insurance expenditure was the purchase of life insurance. In all types of households, except for farmers' households (16.85%), their share in expenditure on insurance was over 40%. The funds earmarked for the purchase of private health insurance constituted only 3–4% of the expenditure earmarked for the purchase of insurance in most types of households, and in the households of retirees and pensioners it was only 2%. The shares of health insurance expenditure are comparable to the item in the structure of total expenditure in 2020 as regards such categories as: alcoholic beverages and tobacco products (2–3%), purchases related to personal hygiene (2.6–3%). It is worth mentioning that in 2020, 4–8% of the expenditure, depending on the type of household, was allocated to the total expenditure recorded in the "health" category.

Table 5. Share of annual health insurance expenditure in total insurance expenses in 2006–2020

Item	Share of health insurance expenses in total insurance expenses in years (%)														
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Households of the self-employed	10.9	8.8	10.7	10.2	10.3	9.9	8.0	5.6	4.8	6.5	5.2	5.1	3.4	4.3	3.2
Households of farmers	11.3	11.2	11.5	8.1	9.0	8.4	6.9	7.3	6.8	6.9	5.5	3.0	4.5	2.7	4.3
Households of employees in manual labor positions	27.3	22.9	21.0	18.1	17.8	15.3	15.6	8.2	8.5	7.7	6.1	5.7	3.6	3.6	3.5
Households of employees in non-manual labor positions	15.3	14.4	14.9	11.9	11.6	10.7	11.3	5.9	5.9	6.4	3.0	3.3	3.5	4.4	3.5
Households of retirees and pensioners	11.1	10.2	11.3	9.64	7.8	8.79	7.29	4.26	4.34	4.66	1.65	2.15	2.34	2.3	2.18

Source: Own study based on SP data.

According to the data from *Household Budget*, in the analyzed years, the largest share of health insurance expenditure in insurance purchases was for households of blue-collar workers, which amounted to an average of 12%, with a maximum of 27.3% and a minimum of 3.5%. The discussed social group made purchases of health insurance for relatively large amounts in relation to the funds spent on the purchase of other insurance. The smallest share was recorded in the households of retirees and disability pensioners — 6%, and ranged from 1.6% in 2016 to 11.27% in 2008. It is worth emphasizing that farmers and entrepreneurs, if they act as private persons, incur expenses for insuring resources involved in

professional activities and production. Therefore, we cannot entirely separate expenses for private health insurance from health insurance paid by enterprise, as entrepreneur and worker is the same person. Additionally, health insurance may be delivered within the complex insurance package bought by an enterprise (Wicka and Leśniewska, 2017; Wicka, 2018).

In the next stage of the analysis, the expenditure structure diversification index was determined on the basis of data from 2020. The types of households were determined, which differed most from the others in terms of the structure of insurance expenditure (total). For this purpose, individual indicators of structure differentiation were written in the form of a symmetrical matrix with dimensions of 5 × 5 (five types of households) and are presented in Table 6. The sixth column of the matrix presents the sums of structure indicators for individual categories of households.

Table 6. Matrix of indicators of diversification of insurance expenditure structures for 2020

p \ q	1	2	3	4	5	∑
1	0.0000	0.0136	0.2490	0.0379	0.0873	0.39
2	0.0136	0.0000	0.1392	0.2783	0.0738	0.50
3	0.2490	0.1392	0.0000	0.2783	0.2936	0.96
4	0.0379	0.2783	0.2783	0.0000	0.0494	0.64
5	0.0873	0.0738	0.2936	0.0494	0.0000	0.50

p — numbers of individual types of households: 1 — employed as blue-collar workers, 2 — employed as non-manual workers, 3 — farmers, 4 — self-employed, 5 — pensioners together

Source: Own study based on SP data.

In 2020, expenses differed to the greatest extent from other structures of expenditure on insurance in farms (total = 0.96). It is worth mentioning that in 2020, farmers' households were characterized by the lowest level of total insurance expenditure and the lowest level of health insurance expenditure. When analyzing the structure of expenses incurred by farmers for the purchase of insurance in 2020, one can notice a significantly lower share of expenses on life insurance (16.8%) in relation to other types of households (over 40%). Among all the analyzed types of households, the structure of insurance expenditures in blue-collar households is the least different from the structure of insurance expenditures in other types of households (0.39).

Conclusions

Based on the analyses, the following conclusions can be drawn:

— In the years analyzed, the total customer demand for health insurance grew in terms of quantity and value. According to the data of the Polish Chamber of Insurance, 3.7 million Poles had health insurance policies at the end of 2021, com-

pared to 3.1 million in 2020. In the same period, the value of the private health insurance market increased from PLN 665 million to PLN 760 million.

— The largest amount for the purchase of health insurance in the years 2006–2020 was incurred in the households of non-manual workers (average PLN 19.72 per person per year), and the lowest in farmers' households (average PLN 8.85 per person per year).

— Expenses for the purchase of health insurance constituted the largest share in the total expenses for the purchase of insurance in the households of blue-collar workers. In the years 2006–2020, it was 12% on average.

— The most diverse structures of expenditure on insurance in general in 2020 were observed in farmers' households (total = 0.96), and the least diversified in workers' households (total = 0.39).

The present study is subject to certain limitations. First, there are no consistent data on health expenditure in households; it is therefore difficult to establish whether insurance is a substitute for direct private health expenditure. The second limitation is that health insurance is presented against the total insurance expenditure, which may make interpretation difficult for people who are strictly interested in healthcare. Motor insurance prices, for example, have risen sharply in recent years, leading to an increase in their share.

Further studies should determine the level and structure of health insurance expenditure individuals and employers incur. This will allow researchers to better recognize the development trends and the importance of this insurance.

References

Borowska, A., Mikuła, A., Raczkowska, M., Utzig, M. (2020). *Konsumpcja dóbr i usług w gospodarstwach domowych w Polsce*. Warszawa: SGGW.

Campbell, J. (2006). Household finance. *The Journal of Finance*, 61(4), 1553–1604. DOI: 10.1111/j.1540-6261.2006.00883.x.

CBOS. (2021). Opinie na temat funkcjonowania systemu opieki zdrowotnej. *Komunikat z Badań CBOS*, (125), 1–10. Retrieved October 2, 2022 from https://www.cbos.pl/SPISKOM.POL/2021/K_125_21.PDF.

Fourquet, J., Zavala, D.E., Missmer, S., Bracero, N., Romaguera, J., Flores, I. (2019). Disparities in healthcare services in women with endometriosis with public vs private health insurance. *American Journal of Obstetrics and Gynecology*, 221(6), 623.e1–623.e11. DOI: 10.1016/j.ajog.2019.06.020.

Garczarczyk, J., Mocek, M., Skikiewicz, R. (2014). *Zachowania gospodarstw domowych na rynku usług finansowych w warunkach zmiennej koniunktury*. Warszawa: CeDeWu.

Garman, S., Hampshire, R., Krishnan, R. (2008). Person-to-person lending: The pursuit of (more) competitive credit markets. In *Proceedings of the International Conference on Information Systems, ICIS 2008, Paris, France, December 14–17, 2008*. Retrieved August 26, 2022 from http://aisel.aisnet.org/icis2008/160.

Garman, E., Forgue, R. (2014). *Personal Finance*. Boston, MA: Cengage Learning.

Globerman, S. (2020). *Canada Must Rethink Restrictions on Private Health Insurance — for the sake of Patients*. Fraser Institute. Retrieved October 2, 2022 from https://policycommons.net/artifacts/420193/canada-must-rethink-restrictions-on-private-health-insurancefor-the-sake-of-patients/1390765/. CID: 20.500.12592/h735rs.

GUS (2007). *Budżety Gospodarstw Domowych w 2006 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2008). *Budżety Gospodarstw Domowych w 2007 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2009). *Budżety Gospodarstw Domowych w 2008 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2010). *Budżety Gospodarstw Domowych w 2009 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2011). *Budżety Gospodarstw Domowych w 2010 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2012). *Budżety Gospodarstw Domowych w 2011 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2013). *Budżety Gospodarstw Domowych w 2012 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2014). *Budżety Gospodarstw Domowych w 2013 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2015). *Budżety Gospodarstw Domowych w 2014 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2016). *Budżety Gospodarstw Domowych w 2015 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2017). *Budżety Gospodarstw Domowych w 2016 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2018a). *Budżety Gospodarstw Domowych w 2017 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2018b). *Zeszyt metodologiczny. Badanie budżetów gospodarstw domowych.* Warszawa: Główny Urząd Statystyczny.

GUS (2019). *Budżety Gospodarstw Domowych w 2018 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2020). *Budżety Gospodarstw Domowych w 2019 r.* Warszawa: Główny Urząd Statystyczny.

GUS (2021a). *Sytuacja gospodarstw domowych w 2020 r. w świetle badania budżetów gospodarstw domowych.* Warszawa: Główny Urząd Statystyczny.

GUS (2021b). *Budżety Gospodarstw Domowych w 2020 r.* Warszawa: Główny Urząd Statystyczny.

Hooley, B., Afriyie, D.O., Fink, G., Tediosi, F. (2022). Health insurance coverage in low-income and middle-income countries: progress made to date and related changes in private and public health expenditure. *BMJ Global Health*, 7(5), e008722. DOI: 10.1136/bmjgh-2022-008722.

Hur, J., Kwon, Y. (2019). Factors affecting the purchase of indemnity private health insurance and related factors of outpatient healthcare utilization among chronic disease patients. *Korea Journal of Hospital Management*, 24(3), 1–10.

Jung, H.W., Kwon, Y.D., Noh, J.-W. (2022). How public and private health insurance coverage mitigates catastrophic health expenditures in Republic of Korea. *BMC Health Services Research*, 22(1), 1042. DOI: 10.1186/s12913-022-08405-4.

Jurkiewicz, I., Tinardon, C. (2010). Rynek prywatnych ubezpieczeń zdrowotnych w krajach europejskich. Przykład rozwiązań francuskich. *Zdrowie Publiczne i Zarządzanie*, 8(1), 95–105.

Jurkiewicz-Świętek, I. (2012). Dobrowolne prywatne ubezpieczenia zdrowotne: propozycje i debata wokół ich wprowadzenia w Polsce. *Zeszyty Naukowe Ochrony Zdrowia, Zdrowie Publiczne i Zarządzanie*, 10(3), 156–170. DOI: 10.4467/20842627OZ.13.017.1165.

Laskowska, I. (2015). Private health insurance and the problem of moral hazard. *Problemy Zarządzania*, 13(53), 58–68. DOI: 10.7172/1644-9584.53.3.

Lee, J.H. (2019). Effects of private health insurance on unmet medical experience in chronic disease patients. *European Journal of Public Health*, 29(supplement 4), ckz186-670. DOI: 10.1093/eurpub/ckz186.670.

Lee, M., Yoon, K. (2019). Catastrophic health expenditures and its inequality in households with cancer patients: A panel study. *Processes*, 7(1), 39. DOI: 10.3390/pr7010039.

Maison, D. (2013). *Polak w świecie finansów: o psychologicznych uwarunkowaniach zachowań ekonomicznych Polaków*. Warszawa: Wydawnictwo Naukowe PWN.

Owoc, J. (2009) Ubezpieczenia zdrowotne — szanse i zagrożenia. *Wiadomości Ubezpieczeniowe*, (2), 102–107.

Perenc, J. (ed.). (1998). *Analiza i funkcjonowanie rynku.* Szczecin: Uniwersytet Szczeciński.

Perenc, J. (Ed.). (2004). *Rynek usług ubezpieczeniowych.* Szczecin: Uniwersytet Szczeciński.
Piekut, M. (2018). Zróżnicowanie wydatków na ubezpieczenia w gospodarstwach domowych. *Wiadomości Statystyczne*, 63(6), 57–72. DOI: 10.5604/01.3001.0014.0780.
PIU (2013). *Rola i funkcja dodatkowych ubezpieczeń zdrowotnych we współczesnych systemach ochrony zdrowia — analiza i rekomendacje dla Polski.* Warszawa: Polska Izba Ubezpieczeń. Retrieved October 2, 2022 from http://www.polisynazdrowie.pl/files/2013_Raport_Rola_i_funkcja_DUZ.pdf.
PIU (8.04.2019). *Liczba Polaków z prywatną polisą zdrowotną przekroczyła 2,5 mln.* Polska Izba Ubezpieczeń. Retrieved October 2, 2022 from https://piu.org.pl/ponad-dwa-i-pol-miliona-polakow-z-polisa/.
PIU (10.02.2021). *Prywatne ubezpieczenia coraz ważniejsze w ochronie zdrowia.* Polska Izba Ubezpieczeń. Retrieved October 2, 2022 from https://piu.org.pl/prywatne-ubezpieczenia-coraz-wazniejsze-w-ochronie-zdrowia/.
Płonka, M. (2018). Private health insurance and public health care in Poland. *Annales Universitatis Mariae Curie-Skłodowska, Sectio H, Oeconomia*, 51(6), 321. DOI: 10.17951/h.2017.51.6.321.
Prędkiewicz, P. (2014). Wpływ prywatnych ubezpieczeń zdrowotnych na charakterystykę systemu zdrowia w wybranych krajach OECD. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Finanse, Rynki Finansowe, Ubezpieczenia*, (65), 583–593.
Rana, R., Alam, K., Gow, J. (2020). Selection of private or public hospital care: examining the care-seeking behaviour of patients with private health insurance. *BMC Health Service Research*, 20, 380. DOI: 10.1186/s12913-020-05253-y.
Redmerska, K. (2022). *Covid sprzyja prywatnym ubezpieczeniom zdrowotnym.* Prawo.pl. Retrieved October 2, 2022 from https://www.prawo.pl/zdrowie/rynek-prywatnych-ubezpieczen-zdrowotnych,513006.html.
Sobieski, L. (2020). *E-zdrowie. Wykorzystanie technologii informacyjnych i komunikacyjnych w celu poprawy jakości usług publicznych w ochronie zdrowia.* Rozprawa doktorska. Retrieved from: https://repozytorium.amu.edu.pl/bitstream/10593/26196/1/rozprawa%20doktorska.pdf
Sriravindrarajah, A., Kotwal, S.S., Sen, S., McDonald, S., Jardine, M., Cass, A., Gallagher, M. (2020). Impact of supplemental private health insurance on dialysis and outcomes. *Internal Medicine Journal*, 50(5), 542–549. DOI: 10.1111/imj.14375.
Swart, N. (2007). *Personal Financial Management.* New York: Creda Communication.
Szromnik, A. (1998a). Psychospołeczne uwarunkowania przemian polskiego rynku ubezpieczeniowego. Cz. 1. *Wiadomości Ubezpieczeniowe*, (7/8), 3–9.
Szromnik, A. (1998b). Psychospołeczne uwarunkowania przemian polskiego rynku ubezpieczeniowego. Cz. 2. *Wiadomości Ubezpieczeniowe*, (9/10), 3–10.
Szromnik, A. (2001). *Rynek ubezpieczeniowy. Społeczne problemy kształtowania i funkcjonowania.* Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.
Świecka B., Musiał M. (2016). Diagnoza finansów gospodarstw domowych w największych miastach Polski. *Finanse, Rynki Finansowe, Ubezpieczenia*, 82(4), 821–832. DOI: 10.18276/frfu.2016.4.82/2-70.
Walkosz, A. (2009). Elementy ekonometrycznej analizy rynku. In: K. Kukuła, A. Goryl, Z. Jędrzejczyk, J. Osiewalski, A. Walkosz (eds.), *Wprowadzenie do ekonometrii* (290–374). Warszawa. Wydawnictwo Naukowe PWN.
Wicka, A., Leśniewska, M. (2017). Nastawienie rolników do ubezpieczeń na życie. *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu*, 19(4), 218–223. DOI: 10.5604/01.3001.0010.5190.
Wicka, A., Świstak, J. (2017). Homo sapiens oeconomicus, Homo oeconomicus — czy ubezpieczenia kupujemy w oparciu o tylko racjonalne czynniki? *Finanse, Rynki Finansowe, Ubezpieczenia*, (5), 403–411. DOI: 10.18276/frfu.2017.89/2-33.

Wicka, A. (2018). Crop insurance with subsidies in Poland — do it works? *Economic Science for Rural Development. Proceedings of the International Scientific Conference*, (49), 178–186. DOI: 10.22616/ESRD.2018.134.

Wicka, A. (2021). Wydatki gospodarstw domowych na ubezpieczenia związane z życiem i zdrowiem. *Studenckie Prace Prawnicze, Administratywistyczne i Ekonomiczne*, 35, 305–317. DOI: 10.19195/1733-5779.35.19.

Wielicka, K. (2014). Zarys funkcjonowania systemów opieki zdrowotnej w wybranych krajach Unii Europejskiej. *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska*, (70), 491–504.

Więckowska, B., Osak, M. (2010). Potencjał prywatnych ubezpieczeń zdrowotnych jako źródła finansowania opieki zdrowotnej w Polsce. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, (106), 212–219.

Wray, Ch., Khare, M., Keyhani, S. (2021). Access to care, cost of care, and satisfaction with care among adults with private and public health insurance in the US. *JAMA Network Open*, 4(6), 2110275. DOI: 10.1001/jamanetworkopen.2021.10275.

Wu, R., Li, N., Ercia, A. (2020). The effects of private health insurance on universal health coverage objectives in China: A systematic literature review. *International Journal of Environmental Research and Public Health*, 17(6), 2049. DOI: 10.3390/ijerph17062049.

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.3

Barbara Borusiak
ORCID: 0000-0003-0672-1135
Poznań University of Economics and Business
barbara.borusiak@ue.poznan.pl

Barbara Kucharska
ORCID: 0000-0003-0669-3330
University of Economics in Katowice
barbara.kucharska@ue.katowice.pl

Pro-environmental or pro-social: Which motivation is stronger in the case of charity retailing engagement?

Date of submission: 5.06.2022; **date of acceptance:** 6.08.2022

JEL classification: L81

Keywords: charity retailing, pro-environmental motivation, pro-social motivation, norm activation model

Abstract

The aim of the study is to examine the intention to engage in charity retailing using the norm activation model which has been widely used to predict people's altruistic and pro-social behavior (De Groot and Steg, 2009, 425–449). Pro-social behavior refers to a person's action that is intended to help other people and consists of a broad range of helping, sharing, and cooperating behaviors. Three forms of engagement in charity retailing were taken into account: buying at a charity shop, volunteering in a charity store, and donating. The current study was conducted in 2019 using the CAWI method on 766 Polish students coming from 16 universities; for data analysis, SEM was applied. We tested two variants of the model. In the first one we connected personal norm, awareness of consequences, and ascription of responsibility with the context of the natural environment protection, whereas in the second the same variables were connected with helping people in general. The findings show that the norm activation model may be applied as a mediator model for explaining intention to engage in shop charity. Both tested models were positively verified — all relations but one were proven to be statistically significant. The only relation which turned out to be statistically insignificant was the relation between awareness of consequences and personal norm. The results show that environmental context increased the strength of the relations between the analyzed variables.

Introduction

The origins of charity retailing in the world can be traced at least as far back as late 19th century. Quality second-hand goods were collected from well-to-do homes and sold in 'salvage stores' in London and provincial centres. Some of the collected products which were in imperfect condition were channelled into renovation in order to make them serviceable for further use (Horne and Maddrell, 2002, 2–6). At the beginning of the 20th century, charity stores with a set of extremely diverse second-hand products were opened in the USA and Canada. The idea of charity retailing was more widespread in the USA during the inter-war economic depression.

Charity shops as we know them today were developed in Great Britain (Horne, 2000). The first modern charity shop was opened in 1947 by Oxfam and the Salvation Army to provide affordable clothes to people who could not otherwise afford them. At the time, the beneficiaries of the store were Greek women and children suffering from the uprising in Greece in 1946 (Horne and Maddrell, 2002, 4–6). During the Second World War, charity shops were established by the British Red Cross.

Since the 1990s, charity shops have been developing rapidly (Horne, 2000). While in 1992 there were 3,480 such shops in the British Isles, by 2002, this number increased to 6,220 (Parsons, 2002, 259–262; Borusiak and Paluchova, 2018, 10), and in 2019 — to 11,209. The number of people employed there amounted to over 25,500, and the number of volunteers — to more than 233,000. As a result of charity store activity in the United Kingdom, in 2018/19, the quantity of textiles kept from being disposed of each year was 339,000 tonnes (Charity Retail Association, 2021).

The number of charity shops has been increasing dynamically in the UK, but they have also been appearing in countries which have no tradition in this regard (such as Poland). The most frequently mentioned reasons for the rather underdeveloped charity retailing in Poland include the period of demand excessing supply in the times of communism (second half of the 20th century), attitudes towards second-hand stores, and the dominantly masculine society in Poland — all resulting in Polish society rather buying new products than used ones (Borusiak and Kucharska, 2019). Most likely, the first charity shops in Poland were founded by the Sue Ryder Foundation in 1991 (Do sklepu charytatywnego…, 8.10.2021).

Over 40 charity shops in Poland are run mainly by local charities and church organizations, including, i.a.: foundations Go'n'Act, Forani, Fundacja Cudów Szafa, Fundacja Inicjatyw Lokalnych i Ekonomii Społecznej, Largo, Magazyn Dobra, Niebo — Fundacja Pasja Życia im. s. Józefy Menendez, Salomon, Menendez, Pallotyńska Fundacja Misyjna Salvatti, Pasja Życia im. s. Józefy, Pomocna Rzecz — Łódzki Sejmik Osób Niepełnosprawnych Rething, Sue Ryder, Siła Rzeczy; associations Kurka Wodna, Towarzystwo Pomocy im. Św. Brata Alberta, My Dla Innych (Drugi obieg rzeczy…, 26.03.2021; Przetakiewicz, 8.03.2017; Oddajesz i kupujesz…, 23.08.2021).

The most important feature of charity stores is that they sell gently used products, donated mainly by individuals (Chattoe-Brown, 2000; Parsons, 2002). Another distinctive characteristic is the low price level, which can be obtained through the low costs resulting from volunteer work involved in running the shops. The surplus of the revenue is donated to charity.

During the many years of charity shops' existence, their activity has been accompanied by a number of changes connected with the professionalisation of the sector, reflected in the increased employment of paid staff (mainly managers) and the introduction of mainstream retailing methods (Parsons, 2004, 259–268). Such stores increasingly have to compete for volunteers and donors (Horne and Maddrell, 2002, 5–6).The universal motive for all forms of involvement in charity retailing is related to "the willingness to help others and do good" (Harrison-Evans, 2016). Involvement in charity shops is also connected with more pragmatic motivations — such as "seasonal cleaning" and the "need to free up space" in the case of donations (Mitchell, Montgomery and Rauch, 2009, 265–266), "meet people, previous retail experience" and "near home" in the case of the motivations of volunteers (Broadbridge and Horne, 1994, 421–437), and to pay a lower price in the case of shoppers (Chattoe-Brown, 2000).

It should be highlighted that the primary goal of charity stores is to help people in need. However, many of them sell donated products which are only slightly used, so charity retailing may help to achieve other objectives, connected with environment protection — give things a second life (Borusiak, Raszka and Skubis, 2019, 91–105). It becomes very important in the throwaway society, which involves using things for a very short time and replacing them by new ones with high frequency (Sinclair, Dewberry, Sheldrick and Moreno, 2017).

The aim of the study is to examine what type of motivation — pro-social or pro-environmental — influences people to a greater extent and encourages them more to engage in charity retailing. Three forms of such an engagement were distinguished: buying at a charity store, working as a volunteer, and donating products.

1. Theoretical framework of the research

The norm activation model (NAM) formulated by Schwartz (1977, 221–279) has been widely used to predict people's altruistic and pro-social behaviors. Such behaviors refer to a person's action that is intended to help other people and consists of a broad range of activities such as helping, sharing, and cooperating behaviors (De Groot and Steg, 2009, 425–429). These activities may involve not only direct help offered to a particular group of people in need (e.g., homeless, addicted, ill, disabled, or socially excluded), but also taking actions which are beneficial for broader groups (such as all inhabitants of a given town). It is closely associated with a person's morality expressed by a personal norm regarded as internalized

behavioral standards not driven by perceived external social pressure (Schwartz, 1977, 221–279; Bamberg, 2012, 219–246) but by one's own behavioral standard (Harland, Staats and Wilke, 2007, 323–334). Initially, the NAM has been mostly applied to explain various types of pro-social intentions and behaviors, such as blood and bone marrow donations or volunteering and helping in emergency situations (Steg and De Groot, 2010, 725–743). Later, the NAM has been applied to study why people engage in pro-environmental actions (Han, Jae and Hwang, 2016, 94–105; Sia and Jose, 2019, 678–694; Borusiak, Szymkowiak, Horska, Raszka and Żelichowska, 2020).

Charity retailing engagement, according to the nature of the charity store itself, is regarded to be a pro-social behavior. However, because it entails selling previously owned goods and giving them a second life, it can be also considered as pro-environmental. For this reason we decided to use NAM as a theoretical framework for the current study. According to NAM, intention to behave prosocially is predicted by personal norm (PN), which in turn is predicted by ascription of responsibility (AR) and by awareness of consequences (AC) (Schwartz, 1977, 221–279). In order to examine two types of motivation: pro-environmental (protecting the environment) and pro-social (helping others), we formulated hypotheses concerning the relations between AR, AC, and PN in two different ways.

In terms of pro-environmental motivation, AC, AR, and PN were related to the link between second-hand purchase as well as charity retailing and environment protection. We formulated the following hypotheses:

H1a. Awareness of consequences (AC) of giving things a second life for the environment is positively related to personal norm (PN) regarding second-hand purchase and charity retailing engagement.

H2a. Ascription of responsibility (AR) for the environment is positively related to personal norm (PN) regarding second-hand purchase and charity retailing engagement.

As we assumed that the more people know about something, the more they are aware of its consequences, we also hypothesized that awareness of consequences determines ascription of responsibility. The following statement was formulated:

H3a. Awareness of consequences (AC) of giving things a second life for the environment is positively related to the ascription of responsibility (AR) for the environment.

Thus, according to the theory of planned behavior, the following hypotheses concerning the relation between personal norm and intention to engage in charity retailing were formulated:

H4a. Personal norm (PN) regarding second-hand purchase and charity retailing engagement is positively related to the intention to buy (IB) at a charity shop.

H5a. Personal norm (PN) regarding second-hand purchase and charity retailing engagement is positively related to the intention to work (IW) for a charity shop.

H6a. Personal norm (PN) regarding second-hand purchase and charity retailing engagement is positively related to the intention to donate (ID) something to a charity shop.

For pro-social motivation, we related AC, AR, and PN to the link between charity shops and helping people. These relationships were expressed in the following hypotheses:

H1b. Awareness of consequences (AC) of charity shops existence for people in need is positively related to personal norm (PN) regarding helping people.

H2b. Ascription of responsibility (AR) for helping people is positively related to personal norm (PN) regarding helping people.

H3b. Awareness of consequences (AC) of charity shops existence for people in need is positively related to the ascription of responsibility (AR) for helping people.

In this case, we also hypothesized that there is a relationship between personal norm and intention to engage in charity retailing:

H4b. Personal norm (PN) regarding helping people is positively related to the intention to shop (IB) in a charity store.

H5b. Personal norm (PN) regarding helping people is positively related to the intention to work (IW) for a charity shop.

H6b. Personal norm (PN) regarding helping people is positively related to the intention to donate (ID) something to a charity shop.

For both types of motivation (pro-environmental and pro-social), we wanted to examine to what extent an intention to engage in charity retailing is driven by an external factor — social norms. They express social pressure understood as perceived expectations of a person's family members and friends. The following hypotheses were formulated:

H7. The social norm (SN) regarding charity engagement is positively related to the intention to buy (IB) at a charity shop.

H8. The social norm (SN) regarding charity engagement is positively related to the intention to work (IW) for a charity shop.

H9. The social norm (SN) regarding charity engagement is positively related to the intention to donate (ID) something to a charity shop.

2. Research methodology

In order to verify the hypotheses, a survey was conducted in 2019, using the CAWI method on 766 Polish students coming from 16 universities located in 7 Polish cities: University of Warsaw, Poznań University of Economics and Business, Adam Mickiewicz University in Poznań, Poznań University of Medical Science, WSB University in Poznań, Poznań University of Life Science, University of Economics in Katowice, Cracow University of Economics, Wroclaw University of Eco-

nomics and Business, Wroclaw Medical University, University of Warmia and Mazury in Olsztyn, John Paul II Catholic University of Lublin, Lublin University of Technology, University of Life Science in Lublin, Czestochowa University of Technology, and University of Szczecin. An electronic questionnaire was distributed using chain-referral sampling. Respondents were ensured about the confidentiality and anonymity of the study.

The questionnaire consisted of two parts. The first part related to the measurement of eight latent variables (AC, AR, PN, SN, IB, IW, ID) using scales adapted from earlier studies. Table 1 provides a full list of the items. Participants were asked to respond to the statements on a seven-point scale ranging from 1 ("I strongly disagree") to 7 ("I strongly agree"). The second part of questionnaire contained demographic questions.

Table 1. Measurement items

Variable	Item/statements	Sources
Awareness of consequences (AC) of giving things a second life for the environment (AC1–AC3) / of charity shops' existence for people in need (AC4–AC6)	AC1.Giving products a second life has a positive influence on the environment	Shin, Im, Jung and Severt, 2018
	AC2. Buying second-hand products is beneficial to the environment	
	AC3. Extending the life of a product by trading second-hand goods is beneficial for the environment	
	AC4. Leaving people in need without help can have serious social consequences.	
	AC5. The existence of charity shops can improve the situation of those in need of help	
	AC6. The existence of charity shops has positive social effects.	
Ascription of responsibility (AR) for the environment (AR1–AR3) / for helping people (AR4–AR6)	AR1. I think that every consumer is partly responsible for the environmental problems caused by the increasing production and consumption.	Shin et al. 2018
	AR2. In my opinion, every consumer should feel partly responsible for the degradation of the environment caused by the increase in production and sale of consumer goods.	
	AR3. Every consumer must take responsibility for the environmental problems caused by their purchases.	
	AR4. I believe that every person should feel obliged to help other people.	
	AR5. Everyone should help other people to the best of their ability.	
	AR6. Everyone should support social initiatives such as charity shops.	

Variable	Item/statements	Sources
Personal norm (PN) regarding second-hand purchase and charity retailing engagement (PN1–PN3) / regarding helping people (PN4–PN6)	PN1. I believe I have a moral obligation to participate in the sale of second-hand products	Shin et al, 2018
	PN2. Being involved in a charity shop is consistent with my moral principles	
	PN3. I feel I have a moral obligation to support initiatives such as a charity shop.	
	PN4. I believe that helping other people is my duty.	
	PN5. I believe I cannot be indifferent to the needs of other people.	
	PN6. My moral principles dictate that I help the needy.	
Social norm (SN) regarding charity engagement	SN1. Most of the people who are important to me expect me to get involved in charity	Joshi and Rahman, 2017, Borusiak et al., 2020
	SN2. Most of the people who are important to me would like me to be involved in charity	
	SN3. People whose opinion I value expect me to get involved in charity	
Intention to buy (IB) at a charity shop	IB1. I plan to buy at a charity shop in the future.	Borusiak et al., 2020; Borusiak and Kucharska, 2019
	IB2. I intend to buy at a charity shop in the future.	
	IB3. I will do my best to make a purchase at a charity shop in the future.	
Intention to work (IW) for a charity shop	IW1. I plan to get involved as a volunteer in a charity store whenever I have such opportunity	Borusiak et al., 2020; Borusiak and Kucharska, 2019
	IW2. I intend to get involved in a voluntary work for a charity shop in the future.	
	IW3. I will do my best to get involved in working for a charity shop in the future.	
Intention to donate (ID) something to a charity shop	ID1. I plan to donate something to a charity shop in the future.	Borusiak et al., 2020; Borusiak and Kucharska, 2019
	ID2. I intend to donate something to the charity shop in the future.	
	ID3. I will do my best to donate something to a charity shop in the future.	

Table 2 presents detailed characteristics of research sample. The respondents were mainly aged 18–30. The majority of respondents comprised woman (71.54%). Most of them declared that human activity contributes to global warming (93.34%). Two-thirds of the respondents work for charity (65.27%) and declare buying second-hand things (60.44%).

Table 2. Demographic analysis

Characteristic of the respondents		Frequency	Percentage
Gender	male	218	28.46
	female	548	71.54
	total	766	100.00
Age	18–19	8	1.04
	19–24	691	94.21
	25–30	53	6.91
	over 30	14	1.83
Opinions about global warming	Human activity contributes to global warming.	715	93.34
	Human activity doesn't contribute to global warming.	51	6.66
Charity activity	I work for charity.	500	65.27
	I don't work for charity.	266	34.73
Buying second-hand things	I buy second-hand things.	463	60.44
	I don't buy second-hand things.	303	39.56

In order to answer the research questions and test the hypotheses, statistical analyses were performed using IBM SPSS Statistics version 25 and AMOS. Using this program, basic descriptive statistics were analyzed.

Descriptive statistics for the measured quantitative variables

In the first step of data analysis, basic descriptive statistics for all items were calculated. The conducted analyses showed that the distribution for each of the items is left-skewed, which suggests that most of the studied results obtained values above the mean. The summary of descriptive statistics is presented in Table 3.

Table 3. Descriptive statistics with a test of the normality of the distribution for the measured quantitative variables

Item	M	Me	SD	Sk.	Kurt.	Min.	Max.
AC1	6.37	7.00	1.13	-2.30	5.86	1.00	7.00
AC2	5.96	6.00	1.27	-1.34	1.58	1.00	7.00
AC3	6.03	6.00	1.18	-1.44	2.14	1.00	7.00
AC4	5.40	6.00	1.53	-0.91	0.24	1.00	7.00
AC5	5.75	6.00	1.36	-1.22	1.30	1.00	7.00
AC6	5.68	6.00	1.32	-1.01	0.73	1.00	7.00
AR1	5.67	6.00	1.40	-1.09	0.73	1.00	7.00
AR2	5.39	6.00	1.58	-0.91	0.09	1.00	7.00
AR3	5.01	5.00	1.70	-0.63	-0.45	1.00	7.00
AR4	5.10	5.00	1.71	-0.75	-0.23	1.00	7.00

Item	M	Me	SD	Sk.	Kurt.	Min.	Max.
AR5	5.50	6.00	1.58	-1.16	0.81	1.00	7.00
AR6	4.61	5.00	1.62	-0.43	-0.40	1.00	7.00
PN1	4.08	4.00	1.77	-0.13	-0.89	1.00	7.00
PN2	4.91	5.00	1.62	-0.56	-0.30	1.00	7.00
PN3	4.31	4.00	1.73	-0.22	-0.79	1.00	7.00
PN4	4.79	5.00	1.75	-0.55	-0.55	1.00	7.00
PN5	5.09	5.00	1.71	-0.79	-0.15	1.00	7.00
PN6	5.22	5.00	1.59	-0.76	-0.09	1.00	7.00
SN1	3.93	4.00	1.68	-0.07	-0.73	1.00	7.00
SN2	3.98	4.00	1.66	-0.09	-0.74	1.00	7.00
SN3	3.94	4.00	1.68	-0.08	-0.75	1.00	7.00
IB1	4.07	4.00	1.79	-0.11	-0.93	1.00	7.00
IB2	4.28	4.00	1.80	-0.23	-0.91	1.00	7.00
IB3	4.48	5.00	1.83	-0.32	-0.87	1.00	7.00
IW1	3.32	3.00	1.74	0.32	-0.83	1.00	7.00
IW2	3.31	3.00	1.72	0.31	-0.80	1.00	7.00
IW3	3.49	3.00	1.77	0.24	-0.90	1.00	7.00
ID1	4.80	5.00	1.66	-0.54	-0.46	1.00	7.00
ID2	4.84	5.00	1.71	-0.57	-0.48	1.00	7.00
ID3	5.12	5.00	1.67	-0.71	0.09	1.00	7.00

M — mean; Me — median; SD — standard deviation; Sk. — skewness; Kurt. — kurtosis; Min — minimal result; Max — maximum result

Then, two stages of analysis were performed (Anderson and Gerbing, 1988): an analysis of validity and reliability of the constructs, as well as hypotheses test on the basis of the two assumed research models, by applying structural equation modelling. Maximum likelihood was adopted as the estimation method. The method of bootstrapping was used to estimate the parameters due to the fact that the assumptions of a multivariate normal distribution were not met. This procedure was performed as suggested by Byrne (2010), Fouladi (1998), Nevitt and Hancock (1998). As the level of significance for the interpretation of the analyses, $\alpha = 0.05$ was assumed.

3. Research results

Measurement model reliability and validity

Confirmatory analysis was conducted to assess the measurement model reliability and validity. It showed a good fit to the data (Hair, Black, Babin, and Anderson,

2009): $\chi 2 \times (360) = 1206.259$; TLI = 0.953, CFI = 0.961; RMSEA = 0.055, SRMR = 0.039. Table 4 shows the measured items with their standardized loadings and all were above the recommended 0.6 (Chin, Gopal and Salisbury, 1997) — between 0.62 and 0.95. All items were significant at $p < 0.001$. In order to conduct measurements of scale reliability, internal consistency was assessed applying Cronbach's α (Hair et al., 2009). The values obtained for Cronbach's α were within the range of 0.82–0.95, presenting good and very good consistency, as suggested by Hair et al. (2009). To measure convergent and discriminant validity, two parameters were applied: Composite Reliability (CR) and Average Variance Extracted (AVE). The obtained values (CR values — between 0.83 and 0.95, AVE values — between 0.62 and 0.82) exceed the recommended values across both sets of data, indicating internal consistency of variables (Bagozzi and Yi, 1988). On the basis of the obtained results, it may be assumed that the conceptual model applied in the current study represents good reliability, and validity, being both convergent and discriminant.

Table 4. Confirmatory factor analysis results

Variable	Item	Loading	p value	Cronbach's α	CR	AVE
AC (model 1)	AC1	0.764	***	0.89	0.89	0.74
	AC2	0.895	***			
	AC3	0.902	***			
AC (model 2)	AC4	0.608	***	0.82	0.83	0.62
	AC5	0.882	***			
	AC6	0.889	***			
AR (model 1)	AR1	0.799	***	0.85	0.86	0.67
	AR2	0.877	***			
	AR3	0.783	***			
AR (model 2)	AR4	0.879	***	0.88	0.88	0.72
	AR5	0.861	***			
	AR6	0.800	***			
PN (model 1)	PN1	0.795	***	0.88	0.89	0.73
	PN2	0.823	***			
	PN3	0.935	***			
PN (model 2)	PN4	0.902	***	0.91	0.91	0.77
	PN5	0.840	***			
	PN6	0.881	***			
SN	SN1	0.909	***	0.95	0.95	0.86
	SN2	0.947	***			
	SN3	0.933	***			

Variable	Item	Loading	p value	Cronbach's α	CR	AVE
IB	IB1	0.921	***	0.95	0.95	0.86
	IB2	0.948	***			
	IB3	0.907	***			
IW	IW1	0.912	***	0.95	0.95	0.86
	IW2	0.954	***			
	IW3	0.923	***			
ID	ID1	0.900	***	0.94	0.94	0.84
	ID2	0.933	***			
	ID3	0.913	***			

CR — Composite Reliability, AVE — Average Variance Extracted, *** p value < 0.001

MODEL 1 — testing pro-environmental motivation

The originally assumed model turned out to be insufficiently fitted to the data ($\chi 2$ (179) = 836.40; $p < 0.001$; CMIN / DF = 4.67; CFI = 0.957; TLI = 0.950; SRMR = 0.107; RMSEA = 0.069; PCLOSE <0.001). While most of the fit parameters were satisfactory, the SRMR and PCLOSE values were unacceptable. Therefore, changes were made to the model, taking into account additional relationships between the variables (reflected in Figure 1).

The value of chi^2 is significant $\chi 2$ (172) = 444.88; $p < 0.001$, indicating a discrepancy between the observed covariance matrix and the model implied. Nevertheless, the value of the chi-square test with large samples is usually significant (the level of significance is related to the sample size and correlations in the model). With large samples, the significance of this statistic can be considered acceptable. On this basis, we did not reject a model the fit indices of which are satisfactory. RMSEA, denoting the mean square root of the approximation error, indicates a good fit to the data. The acceptable limit for this indicator is 0.08, and in this model it is 0.046. PCLOSE = 0.919. The acceptable value of the SRMR fit error coefficient is 0.08, and in the current model it is SRMR = 0.063. The comparative match index (CFI = 0.982) is satisfactory, as is TLI = 0.978. Standardized regression coefficients for the estimated model are presented in Figure 1.

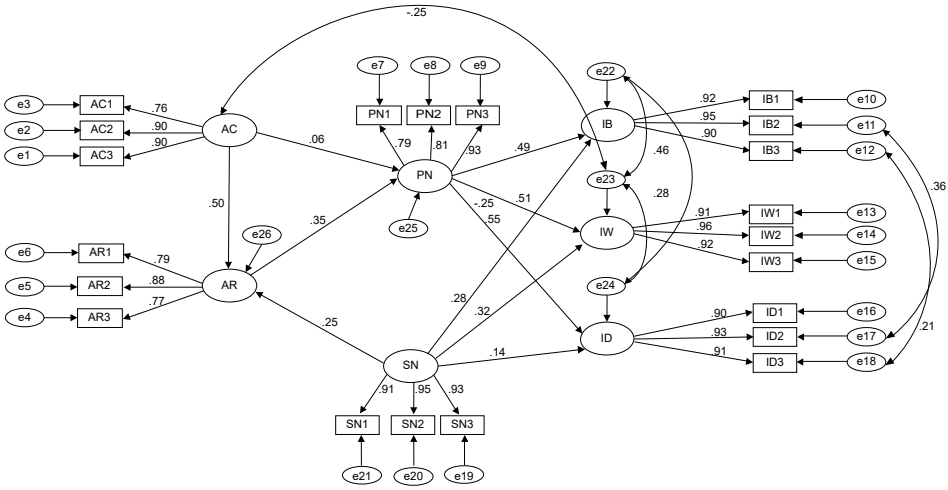


Figure. 1. Standardized regression coefficients for Model 1

To estimate the model parameters, the bootstrapping method for 2000 sampling was applied, using the percentile error correction method. As shown in Figure 1, all items within the factors were characterized by high load values. The lowest value of the factor load was 0.76 and the highest 0.96. Table 5 shows the estimated regression coefficients along with the 95% confidence interval for the direct effects included in Model 1.

Table 5. Estimated regression coefficients for the direct effects included in Model 1

Variables relationship			B	Beta	LLCI	ULCI	p
AR	←	AC	0.601	0.496	0.503	0.703	0.001
AR	←	SN	0.206	0.250	0.135	0.274	0.001
PN	←	AC	0.074	0.057	-0.026	0.166	0.164
PN	←	AR	0.372	0.347	0.280	0.471	0.001
PN	←	SN	0.472	0.534	0.410	0.530	0.001
ID	←	SN	0.130	0.137	0.037	0.222	0.003
IW	←	SN	0.324	0.318	0.241	0.408	0.001
IB	←	SN	0.289	0.278	0.201	0.379	0.001
IB	←	PN	0.581	0.493	0.474	0.689	0.001
IW	←	PN	0.589	0.511	0.494	0.678	0.001
ID	←	PN	0.594	0.555	0.486	0.708	0.001

B — non-standardized regression coefficient; Beta — standardized regression coefficient; LLCI and ULLCI — lower and upper limits of the 95% confidence interval; p — significance level

The conducted analysis showed that only the influence of AC on PN turned out to be statistically insignificant, which indicates hypothesis 1a was not con-

firmed. The remaining relationships in the model are statistically significant and positive, which confirms the assumptions adopted in H2a–H6a and H7–H9.

As AC increases by one unit, the AR level increases by 0.60 unit. As SN increases by one unit, the AR level increases by 0.21 unit, PN by 0.47 unit, ID by 0.13 unit, and IW by 0.32 unit. When the PN level increases by one unit, IB increases by 0.58 unit, IW by 0.59 unit, and ID by 0.59 unit. The strongest relationships are noted for the influence of AC on AR, PN on IB, PN on IW, PN on ID, and SN on PN.

Apart from direct effects, Model 1 shows several indirect ones. Table 6 shows the non-standardized values for indirect effects.

Table 6. Non-standardized values for indirect effects in Model 1

Variable	AC	SN	AR	PN	ID	IW	IB
AR	—	—	—	—	—	—	—
PN	0.224**	0.077**	—	—	—	—	—
ID	0.177**	0.326**	0.221**	—	—	—	—
IW	0.175**	0.323**	0.219**	—	—	—	—
IB	0.173**	0.318**	0.216**	—	—	—	—

*p < 0.05; **p < 0.01

As shown in Table 6, all analyzed indirect effects turned out to be statistically significant. AC influences the PN indirectly through AR. The direct relationship between AC and PN turned out to be insignificant. However, when taking into account the AR, it becomes significant, which indicates the presence of a suppressive effect. AC indirectly affects ID, IW, and IB through AR and PN, which means that although AC does not directly affect ID, IW, and IB. The influence of this variable is significant through AR and PN. AR has a significant and positive impact on ID, IW, and IB via PN. Apart from its direct influence on ID, IW, and IB, SN also influences these variables indirectly through AR and PN.

MODEL 2 — testing pro-social motivation

The originally assumed model turned out to be insufficiently well fitted to the data ($\chi 2$ (179) = 1199.242; $p < 0.001$; CMIN / DF = 6.70; CFI = 0.936; TLI = 0.925; SRMR = 0.184; RMSEA = 0.086; PCLOSE < 0.001). The values of most parameters (except CFI) indicate an unacceptable fit of the model to the data. Therefore changes were made to the model, taking into account additional relationships between the variables (reflected on Figure 2).

For the modified model, the chi^2 value is significant $\chi 2$ (173) = 546.36; $p < 0.001$, CMIN / DF = 3.14. However, the remaining indicators point to a satisfactory fit of the data to the model (RMSEA = 0.054; PCLOSE = 0.149;

SRMR = 0.054; TLI = 0.972; CFI = 0.977). Standardized regression coefficients for the estimated model are presented in Figure 2.

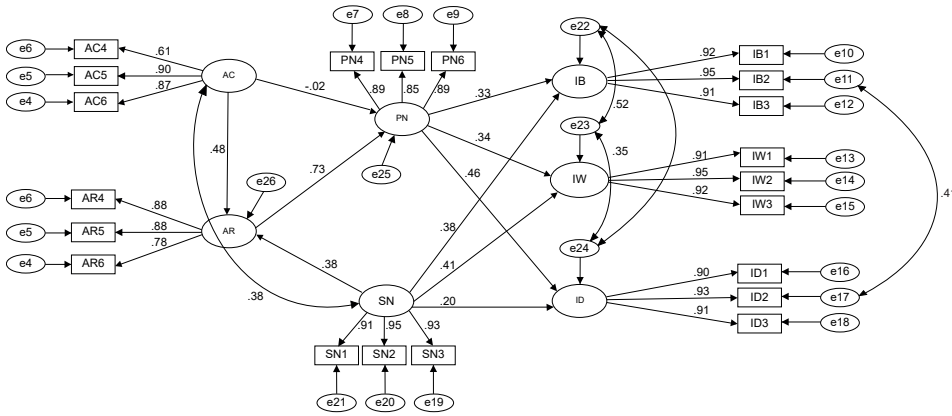


Figure 2. Standardized regression coefficients for Model 2

To estimate the model parameters, the bootstrapping method for 2000 sampling was applied, using the percentile error correction method. As in Model 1, also in Model 2 all items within the factors were characterized by high load values. The lowest value of the factor load was 0.61 and the highest 0.95. Table 7 shows the estimated regression coefficients along with the 95% confidence interval for the direct effects included in Model 2.

Table 7. Estimated regression coefficients for the direct effects included in Model 2

Variables relationship			B	Beta	LLCI	ULCI	p
AR	←	AC	0.530	0.479	0.423	0.637	0.001
AR	←	SN	0.304	0.378	0.243	0.365	0.001
PN	←	AC	-0.029	-0.021	-0.135	0.072	0.573
PN	←	AR	0.908	0.734	0.784	1.039	0.001
PN	←	SN	0.246	0.247	0.189	0.312	0.001
ID	←	SN	0.187	0.196	0.090	0.276	0.002
IW	←	SN	0.417	0.412	0.324	0.506	0.001
IB	←	SN	0.403	0.384	0.307	0.498	0.001
IB	←	PN	0.343	0.325	0.237	0.445	0.001
IW	←	PN	0.345	0.339	0.262	0.439	0.001
ID	←	PN	0.444	0.463	0.346	0.556	0.001

B — non-standardized regression coefficient; Beta — standardized regression coefficient; LLCI and ULLCI — lower and upper limits of the 95% confidence interval; p — significance level

The results included in Model 2 showed very similar relationships to Model 1. The direct influence of AC on PN turned out to be insignificant, while the remain-

ing relationships are statistically significant and positive. It allowed us to confirm the assumptions adopted in H2b–H6b and H7–H9.

AC has a moderate and positive impact on AR, SN — moderate and positive effect on AR, IW and IB, while weak and positive one on PN and ID. AR has a strong and positive impact on PN, and PN — a moderate and positive one on IB, IW, and ID. Additionally, apart from the direct effects, the indirect effects for the analyzed model were analyzed. Table 8 presents non-standardized values of indirect effects.

Table 8. Non-standardized values for indirect effects in Model 2

Variable	SN	AC	AR	PN	ID	IW	IB
AR	—	—	—	—	—	—	—
PN	0.276**	0.481**	—	—	—	—	—
ID	0.232**	0.201**	0.403**	—	—	—	—
IW	0.180**	0.156**	0.313**	—	—	—	—
IB	0.179**	0.155**	0.311**	—	—	—	—

*p < 0.05; **p < 0.01

All analyzed indirect effects turned out to be statistically significant. As shown in Table 8, all analyzed indirect effects turned out to be statistically significant. Apart from its direct influence on ID, IW and IB, SN also influences these variables indirectly through AR and PN. AC through AR influences the PN indirectly. The direct relationship between AC and PN turned out to be insignificant (as in Model 1). However, when taking into account AR, it is significant, which indicates the presence of a suppressive effect. AC indirectly affects ID, IW, and IB through AR and PN, which means that although AC does not directly affect ID, IW, and IB, the influence of this variable is significant through AR and PN. AR has a significant and positive impact on ID, IW, and IB via PN.

4. Discussion

The objective of the current study was to investigate the predictors of intention to engage in charity retailing. Norm activation model was applied as a main theoretical framework. In accordance with NAM, we hypothesized that both awareness of consequences of giving things a second life for the environment and of charity shops' existence for people in need, as well as ascription of responsibility for the environment and for helping people impact personal norm directly. However, the results we obtained support the value-belief-norm theory assumption that ascription of responsibility mediates the influence of awareness of consequences on personal norm (Stern, Dietz, Abel, Guagnano and Kalof, 1999, 81–97). It is

also consistent with findings of De Groot and Steg (2009) as well as Onwezen, Antonides and Bartels (2013), which favored the mediator model. At the same time, it should be highlighted that the VBN model concerns pro-environmental behavior and we found the mediating effect in case of both pro-environmental behavior personal norm and pro-social one. It can be explained with their similar nature: both pro-environmental and pro-social personal norms may be regarded as altruistic, i.e., motivated by internal values.

According to the results of our study, pro-environmental internal motivation (expressed by personal norm) turned out to be stronger when compared to an externally driven motivation expressed by social norm which reflects what is perceived as expectations of a person's family members and/or friends as far as charity retailing is concerned. It is visible for every form of charity retailing engagement intention; however, the biggest difference can be observed in the intention to donate something. It is predicted by personal norm to a much higher extent than social one. Taking into account pro-social motivation, the results are different: social norm was found to predict charity retailing engagement intention to a higher degree than personal norm for two kinds of engagement intention: to buy something and to work for a charity shop. The intention to donate something was influenced by personal rather than social norm. These findings can be explained by higher sensitivity to the environmental issues than to social ones, which may result from the fact that environmental problems touch everybody (including the study participants), whereas challenges faced by people in need may be perceived as distant and unrelated to the respondents' lives.

Conclusions

There are two main findings of the current study. First — it turned out that pro-environmental internal motivation was found to be stronger in comparison with external motivation, whereas in the case of pro-social motivation, the influence of perceived expectations of the important others turned out to be more important than internal motivation (for two forms of charity retailing engagement). Another interesting finding is related to the lack of a direct influence of awareness of consequences (in both models) on personal norm (regarding both charity retailing engagement and helping people). However, indirect impact was revealed — ascription of responsibility was found to work as a mediator. This is consistent with the findings of Stern et al. (1999, 81–97) which resulted in NAM extension included in the Value-Belief-Norm theory. Ascription of responsibility also turned out to be a mediator between social norm and personal norm, which means that expectations of others drive — through the feeling of responsibility — personal norm. In both models, this enhanced the direct impact of social norm on personal one.

The results of the current study can be used by charity retailing management for building people's motivation to get engaged in charity shop activities. Indicating environmental benefits connected with giving things a second life could be a good promotion narrative for such actions. Another important challenge is to enhance people's ascription of responsibility for the environment and for helping others. The results of our study indicate that it is not enough to teach people about the consequences of giving things a second life for the environment and of charity shops' existence for people in need. In order to make the knowledge effective, it is necessary to evoke the feeling of responsibility.

There are two main limitations of the current study. One is connected with the sample, which was not representative: 98.17% respondents were between 18 and 30, and women were the overwhelming majority (71.54%) among the survey participants. At the same time, the results of previous studies show that women were in general more involved in charity activities than men (CBOS, 2016). It should be also mentioned that the majority of respondents do buy second-hand things and work for charity, so it could also bias the results. The other limitation comes from the technique of data collection — applied self-reporting method (CAWI) may cause bias in the results due to the effects of social desirability.

Future studies could investigate behavioral intention (behavior gap) and be devoted to determinants of charity retailing involvement — buying at a charity shop, working as a volunteer, as well as donating to a charity shop. It would be interesting to examine the impact of intention to engage in charity retailing on actual involvement.

References

Anderson, J., Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411–423. DOI: 10.1037/0033-2909.103.3.411.

Bagozzi, R., Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94. DOI: 10.1007/BF02723327.

Bamberg, S. (2012). Chapter 9. Understanding and promoting bicycle use — insights from psychological research. In J. Parkin (ed.), *Cycling and Sustainability*. Bingley: Emerald. DOI: 10.1108/S2044-9941(2012)0000001011.

Borusiak, B., Kucharska, B. (2019). Sustainability in retailing: A study of consumer intentions regarding involvement in charity shop activities. *Studia Periegetica*, 1(25). DOI: 10.26349/st.per.0025.05.

Borusiak, B., Paluchova, J. (2018). Business with a mission: The motives behind engagement in charity retailing. *Handel Wewnętrzny*, 6(377), 7–17.

Borusiak, B., Raszka, N., Skubis, M. (2019). How to teach sustainability to students of marketing — "Magazyn Dobra" charity shop case study. In M. Pietrzykowski (ed.), *Fostering Entrepreneurial and Sales Competencies in Higher Education*. Poznań: Bogucki. DOI: 10.12657/9788379862801-7.

Borusiak, B., Szymkowiak, A., Horska, E., Raszka, N., Żelichowska, E. (2020). Towards building sustainable consumption: A study of second-hand buying intentions. *Sustainability*, 12(3). DOI: 10.3390/su12030875.

Broadbridge, A., Horne, S. (1994). Who volunteers for charity retailing and why? *The Service Industries Journal*, 14(4), 421–437.

Byrne, B.M. (2010). *Multivariate applications series. Structural equation modeling with AMOS: Basic Concepts, Applications, and Programming.* New York: Routledge.

CBOS. (2016). *Dobroczynność w Polce*. Komunikat z badań nr 40. Retrieved June 5, 2022 from https://www.cbos.pl/SPISKOM.POL/2016/K_040_16.PDF.

Charity Retail Association. (2021). *Key Statistics*. Retrieved June 5, 2022 from https://www.charityretail.org.uk/key-statistics/.

Chattoe-Brown, E. (2000). Charity shops as second-hand markets. *International Journal of Nonprofit and Voluntary Sector Marketing*, 5(2), 153–160. DOI: 10.1002/nvsm.107.

Chin, W.W., Gopal, A., Salisbury, W.D. (1997). Advancing the theory of adaptive structuration: The development of a scale to measure faithfulness of appropriation. *Information Systems Research*, 8(4), 342–367. DOI: 10.1287/isre.8.4.342.

De Groot, J.I., Steg, L. (2009). Morality and prosocial behavior: the role of awareness, responsibility, and norms in the norm activation model. *Journal of Social Psychology*, 149(4), 425–449. DOI: 10.3200/SOCP.149.4.425-449.

Drugi obieg rzeczy z dodatkiem dobra — lista sklepów charytatywnych w Polsce. (26.03.2021) Potrzebne.pl Retrieved June 5, 2022 from https://potrzebne.pl/blog/wiecej-o-nas/drugi-obieg-rzeczy-z-dodatkiem-dobra-lista-sklepow-charytatywnych-w-polsce.

Fouladi, R.T. (1998). Covariance structure analysis techniques under conditions of multivariate normality and nonnormality — modified and bootstrap based test statistics. In *Diversity & Citizenship in Multicultural Societies*, 13–17.04.1998. San Diego, CA: The American Educational Research Association.

Hair, J., Black, W., Babin, B., Anderson, R. (2009). *Multivariate Data Analysis*. Upper Saddle River, NJ: Pearson Prentice Hall.

Han, H., Jae, M., Hwang, J. (2016). Cruise travelers' environmentally responsible decision-making: An integrative framework of goal-directed behavior and norm activation process. *International Journal of Hospitality Management*, 53, 94–105. DOI: 10.1016/j.ijhm.2015.12.005.

Harland, P., Staats, H. Wilke, H.A. (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behavior: Questions derived from norm activation theory. *Basic and Applied Social Psychology*, 29(4), 323–334.

Harrison-Evans, P. (2016). *Shopping for Good: The Social Benefits of Charity Retail*. London: Demos.

Horne, S. (2000). The charity shop: Purpose and change. *International Journal of Nonprofit and Voluntary Sector Marketing*, 5(2), 113–124. DOI: 10.1002/nvsm.104.

Horne, S., Maddrell, A. (2000). Editorial. *International Journal of Nonprofit and Voluntary Sector Marketing*, 5(2), 101–102.

Horne, S., Maddrell, A. (2002). *Charity Shops: Retailing, Consumption and Society*. London: Routledge.

Joshi, Y., Rahman, Z. (2017). Investigating the determinants of consumers' sustainable purchase behaviour. *Sustainable Production and Consumption*, 10, 110–120. DOI: 10.1016/j.spc.2017.02.002.

Mitchell, M., Montgomery, R., Rauch, D. (2009). Toward an understanding of thrift store donors. *International Journal of Nonprofit and Voluntary Sector Marketing*, 14(3) 255–269. DOI: 10.1002/nvsm.360.

Nevitt, J., Hancock, G.R. (1998). Relative performance of rescaling and resampling approaches to model Chi-square and parameter standard error estimation in structural equation modeling. In *Diversity & Citizenship in Multicultural Societies*, 13–17.04.1998. San Diego: The American Educational Research Association.

Oddajesz i kupujesz. Ruszył pierwszy taki sklep w galerii handlowej. (23.08.2021). *Business Insider Polska*. Retrieved June 5, 2022 from https://businessinsider.com.pl/finanse/handel/oddajesz-i-kupujesz-sklepow-charytatywnych-przybywa/ser2p5b.

Onwezen, M.C., Antonides, G., Bartels, J. (2013). The norm activation model: An exploration of the functions of anticipated pride and guilt in pro-environmental behaviour. *Journal of Economic Psychology*, 39, 141–153. DOI: 10.1016/j.joep.2013.07.005.

Parsons, E. (2002). Charity retail: Past, present and future. *International Journal of Retail and Distribution Management*, 30(12), 586–594.

Parsons, E. (2004). Charity shop managers in the UK: Becoming more professional? *Journal of Retailing and Consumer Services*, 11, 259–268.

Przetakiewicz, Z. (8.03.2017). *Sklepy dobroczynne*. Retrieved June 5, 2022 from https://go-local.pl/sklepy-dobroczynne/.

Schwartz, S.H. (1977). Normative influences on altruism. In L. Berkowitz (ed), *Advances in Experimental Social Psychology*, vol. 10 (221–279). New York: Academic Press.

Shin, Y.H., Im, J., Jung, S. E., Severt, K. (2018). The theory of planned behavior and the norm activation model approach to consumer behavior regarding organic menus. *International Journal of Hospitality Management*, 69, 21–29. DOI: 10.1016/j.ijhm.2017.10.011.

Sia, S.K., Jose, A. (2019). Attitude and subjective norm as personal moral obligation mediated predictors of intention to build eco-friendly house. *Management of Environmental Quality: An International Journal*, 30(4), 678–694. DOI: 10.1108/meq-02-2019-0038.

Sinclair, M., Dewberry, E., Sheldrick, L., Moreno, M. (2017). Developing scenarios for product longevity and sufficiency. In C.A. Bakker, R. Mugge (eds.), *PLATE 2017 Conference Proceedings*, 8–10.11.2017. Delft: IOS Press. DOI: 10.3233/978-1-61499-820-4-108.

Socha-Jakubowska, P. (3.10.2021). Do sklepu charytatywnego po jedwabny szal. O co w tym wszystkim chodzi? *Wprost*. Retrieved June 5, 2022 from https://www.wprost.pl/kraj/10502374/sklepy-charytatywne-na-czym-ich-dzialalnosc-polega-kto-z-nich-korzysta.html.

Steg, L., De Groot, J. (2010). Explaining prosocial intentions: Testing causal relationships in the norm activation model. *British Journal of Social Psychology*, 49(4), 725–743. DOI: 10.1348/014466609X477745.

Stern, P.C., Dietz, T., Abel, T., Guagnano, G.A., Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review*, 6(2), 81–97.

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.4

Iwona Czerska
ORCID: 0000-0002-9680-6695
Wroclaw University of Economics and Business
iwona.czerska@ue.wroc.pl

Value-based medicine as an opportunity for the Polish healthcare system in a post-pandemic reality on the example of selected health programs

Date of submission: 28.04.2022; **date of acceptance:** 1.08.2022

JEL classification: I12, I18

Keywords: value-based medicine, evidence-based medicine, healthcare system, post-pandemic reality, COVID-19 pandemic

Abstract

The article aims to present the concept of value-based medicine (VBM) in the Polish health care system. The author reviewed the literature on the subject and formulated a research problem and two research questions to solve it. The issue of considering is health programs of the National Health Fund based on value. The author used professional scientific databases: Taylor & Francis online, PubMed, and Google Scholar to collect the bibliography. The literature on the subject covers mainly the years 2020–2022. First, the author presented the study's theoretical framework by defining the EBM and VBM concepts, discussing the three main pillars of VBM, and highlighting its value limitations. Next, the author referred to the coronavirus pandemic and its impact on global health systems. The author characterized the current state of the health care system in Poland and listed its prospects for the post-pandemic future. Finally, the author presented three selected health programs based on the VBM model implemented in Polish healthcare: comprehensive coordinated care after myocardial infarction (KOS-Zawał), POZ PLUS model, and comprehensive treatment of chronic wounds (KLRP-1 and KLRP-2). Of course, the discussed programs require further improvement and modification and may constitute the basis for developing other, new value-based programs. The value-based medicine model can complement the three branches of medicine — evidence-based, narrative, and integrative. Including these elements in the VBM model could benefit the entire health system, primarily medical staff and patients.

Introduction

This study aimed to synthesize the state of knowledge about value-based medicine (VBM) by reviewing the literature on the subject — regarding the health system in Poland in the current pandemic reality. The research problem is to determine whether there are implementations of the VBM model in the Polish healthcare system. To solve the research problem, the author posed the following questions:

1. What is the current state of implementing the selected VBM models in the Polish health system?

2. Will there be a chance to develop the VBM models in the Polish health sector in the post-pandemic reality?

The subject of consideration is selected examples of implementations of the value-based medicine model in the health sector in Poland. The object of the research is the Polish healthcare system.

1. Theoretical framework of the research

Shared clinical decision-making and patient empowerment are considered essential features of the value concept, which has played a crucial role in the health care system for over a decade. However, the lack of a standard and widely accepted definition of value translates into a failure to identify a unique model of care in the health care system. Despite the lack of unanimity on the purpose of value, researchers commonly consider it a normative guideline that helps medical professionals evaluate actions or situations, influencing the decision-making process (Marzorati and Pravettoni, 2017, 101). Values are normative cues for considering activities, objects, or conditions as good, desirable, pleasurable, convenient, or helpful in achieving specific goals. Identifying values relevant to daily medical practice can achieve through collaboration between two different paradigms: evidence-based medicine (EBM) and value-based medicine (VBM) (Altamirano-Bustamante et al., 2013).

Within the framework of evidence-based medicine, the literature distinguishes three basic principles (Kus et al., 2018, 340): making clinical decisions based on systematic summaries of available scientific and medical data and their high quality; use of the literature according to the hierarchy of so-called scientific evidence; criticism of scientific research to make rational and justified clinical decisions. According to Vandenberghe (2008, 377), evidence-based medicine is an algorithm that integrates information technology and research findings into the clinical work of medical professionals. EBM is a valuable and critical bottom-up method by which a physician can consciously choose the optimal treatment. The EBM method integrates the individual patient and crucial analysis of the relevant literature. Medical professionals should use it critically and be aware of its limi-

tations, namely attaching more importance to the biomedical sciences, empirics, and quantitative research than to the humanities, hermeneutics, and qualitative research. Thus, EBM focuses on internal validity but ignores qualitative changes which are difficult to measure, making it challenging to generalize research findings to clinical practice. Hence, the contemporary debate on the status of evidence-based medicine criticizes it for "scientism," epistemological inconsistency, rigidity, and disregard for non-numerical sources of knowledge. In response, many alternative frameworks are proposed, including value-based medicine, narrative medicine, patient-centered care, and person-centered medicine (Little, Lipworth, Gordon and Markham, 2011). Ideally, the EBM concept should be used with value-based medicine (VBM) because EBM does not teach utility or value. At the same time, VBM helps clarify and weigh the values the doctor has at stake in the treatment process (Vandenberghe, 2008, 377).

According to Bae (2015):

> The team defined VBM as "the practice of medicine incorporating the highest level of evidence-based data with the patient-perceived value conferred by healthcare interventions for the resources expended." In the above sentence, three major components of VBM are highlighted. First, EBM principles are thoroughly selected based on the best research evidence available and applied as treatment options. Second, patients' values are converted into measurable utility values to facilitate the integration. Third, […] the ultimate goal pursued by VBM is to provide cost effective, science-based healthcare that incorporates patient values.

Porter and Olmsted Teisberg (2006) claim that the focus should be on value for patients, not merely on reducing the cost of the treatment process. Treatment outcomes are essential and high-quality care should be less costly. Additionally, value as a product of provider experience, scale, and science should be regional and national, not only local. Finally, the performance and pricing information needed to build value should be widely available.

The value in the VBM model can be measured by objectively quantifying the improvement in quality of life and/or the improvement in life expectancy resulting from the intervention (Brown, Brown and Sharma, 2003, 157). The utility analysis is the methodology for quantifying the patient's quality of life. This way, the improvement obtained for a given medical intervention can quantify. This approach uses data on the effectiveness of therapy and changes in quality of life due to side effects. After identifying the determinants of a patient's quality of life, these data can combine with evidence from relevant clinical trials in a decision model (Center for Value-Based Medicine, 2020).

The VBM model actively considers patient values and their quality of life and has excellent potential to improve healthcare quality due to compliance with the principles of medical ethics. Value-based medicine can also reduce the uncertainty of clinical decisions. Nevertheless, VBM has its limitations in terms of values, namely: 1. the values of various stakeholders may conflict with one another; 2. different values may change over time; 3. the availability of different treatment options

for comorbidities is not guaranteed; 4. there is no standardized value-in-use database; 5. the threshold for the cost-utility index is unclear; 6. it is impossible to compare countries with different economic structures and health systems (Bae, 2015).

In summary, reducing medicine to an evidence-based technological paradigm, i.e., rigorous clinical methods with only objective perspectives and quantitative measurement seeking one final objective, "truth," stands in opposition to person-centered, value-based medicine. It includes flexible methods, qualitative approaches, and an awareness of the relativity of "truths" (Grassi, McFarland and Riba, 2022, 11). That is why it is essential to integrate two concepts in the treatment process: EBM and VBM. Evidence-based medicine alone often measures improvements in life expectancy, usually ignoring the role of gain or loss of quality of life. On the other hand, value-based medicine incorporates the best features of evidence-based medicine, taking evidence-based data to the next level by combining patients' perceptions of quality of life with a disease to assess clinical value (Rajkumar, 2022).

2. Research methodology

The author used the desk research method to gather information about the value-based medicine model. During the analysis, the author studied scientific articles, industry literature and reports (25), and electronic sources (13), mainly from 2020 to 2022. To gather relevant scientific literature, the author used the following professional databases (brackets show the number of cited publications in a given database): Taylor & Francis Online (3), PubMed (17), and Google Scholar (11). The author used these scientific databases due to the possibility of collecting the literature for this article.

3. The COVID-19 pandemic and its impact on global health systems

In December 2019, epidemiologists identified pneumonia of unknown origin in Wuhan, China's Hubei province. After careful study, scientists isolated a new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Since then, the new virus has spread globally, and the World Health Organization declared a pandemic on March 12, 2020 (Ciotti et al., 2020, 365). In Poland, the first case of COVID-19 was diagnosed on March 4, 2020, and since then, the coronavirus has started spreading gradually throughout the country (Sozański et al., 2021).

The coronavirus pandemic has exposed considerable weaknesses in the performance of health systems worldwide and has changed healthcare priorities (Khetrapal and Bhatia, 2020, 396–397). Access to planned healthcare was seriously at risk. This situation has had a devastating effect on basic healthcare needs

in poorer countries, particularly for groups such as children, women, and people living on the poverty line. Therefore, in a post-pandemic reality, ensuring universal and properly functioning health infrastructure for the population will be challenging even for rich countries (Jain, 2021, 2). The COVID-19 pandemic has shown that every country remains vulnerable to public health threats. The pursuit of a healthier and safer society requires all countries to develop and implement a coherent health policy strategy to improve the management of public health crises. Increase your capacity to build public health systems and minimize upstream fragmentation in addressing structural problems. This solution is possible thanks to a primary care approach that ensures universal and equitable health prophylactic and preventive services (Assefa et al., 2022). Rađenović et al. (2022, 7) indicate that efficient and comprehensive healthcare systems capable of dealing with public health emergencies are necessary for strengthening global health security. Shamasunder et al. (2020, 1087) state that the COVID-19 pandemic offers the potential for a fundamental change in global healthcare systems. Hence, a new global health paradigm, guided by genuine cooperation, solidarity, and justice, is indispensable for our health and the world's health.

4. Polish healthcare system — current state and prospects for a post-pandemic future

The current state of the health care system in Poland indicates the need for urgent changes, i.e., quick actions related to the financing and organization of healthcare. This system is not patient-friendly as it does not treat the patient holistically. It does not ensure the effective use of public funds and generates problems for the managers of medical entities and the staff employed there. Everyday issues include the lack of medical staff, burnout, insufficient availability, quality and comprehensiveness of services, and unused resources in the equipment purchased, which stands still because there is no contract for the extension of services. There is a lack of long-term care and proper coordination of care benefits. Another serious issue is insufficient money to develop an epidemiological treatment for nosocomial infections and antibiotic therapy (Najwyższa Izba Kontroli, 2019).

In the context of medical staff development and increasing their number, merely increasing enrollment at universities is not enough. It is essential to define the path of medical staff development and implement a system that motivates people to undertake particularly scarce specializations. According to Prof. Aleksander Woźny (2021/2022, 23), a cultural anthropologist, philosopher, and media expert, such activities should be mandatory in training medical staff in Poland in the context of their development. Young adepts of medical art should be prepared through narrative medicine to listen carefully to the patient. The literature points out the importance of narrative therapy as the key to ensuring a higher standard of

healthcare in a post-pandemic reality. Through narratives in healthcare, the patient is treated holistically — as a person, not as a symptom complex. The doctor can better recognize the patient's fears, emotions, and feelings about their condition (Czerska, 2021, 949).

In addition to narrative medicine, the future of the Polish healthcare system may turn out to be integrative medicine, which is a new, innovative approach to therapy, combining conventional (Western) medicine with alternative methods of scientifically proven effectiveness. The integrative medicine model responds to the need for an individualized, holistic approach to the patient (Czerska and Skweres-Kuchta, 2021, 800). Integrative medicine integrates elements of lifestyle medicine — as a pro-health trend of the modern prosumer (Czerska, Trojanowska and Korpak, 2020, 23) and traditional treatment with clinical medicine and academic medicine (Jeżewski, 2021).

4.1. Value-based medicine in Poland — selected examples of implementations and limitations

Value-based medicine seems to be the future of the Polish health system. Such a VBM model allows healthcare providers to better respond to the needs of patients, and the value created is economical and ethical. Under performance-based contracts, health service providers receive bonuses for improving patients' health, reducing the effects and incidence of chronic diseases, and proven healthier lifestyles (Pracodawcy Medycyny Prywatnej and Deloitte, 2020, 34). So far, various value-based programs have appeared in the Polish healthcare system. Among them are comprehensive health care (KOZ), coordinated ambulatory healthcare (KAOZ), comprehensive outpatient specialty care for patients with diabetes (KAOS-Cukrzyca), children's coordinated care (DOK), coordinated care for pregnant women (KOC), coordinated care for patients with chronic kidney disease (coordinated nephrology care), "fast track" for cancer patients (oncology package), as well as comprehensive, coordinated care after myocardial infarction (KOS-Zawał), POZ PLUS model, comprehensive treatment of chronic wounds (KLRP-1 and KLRP-2).

The mentioned health programs are not developing very dynamically and still pose new challenges for medical entities and the public payer. The author chose the last three health programs for analysis because of their particular importance during the coronavirus pandemic and prospects for further development. Because according to Dr. Jacek Krajewski, president of the organization Porozumienie Zielonogórskie, primary healthcare (POZ) saved the entire health system in Poland during the difficult pandemic period (*HCC Online*…, 2020). The KOS-Zawał program is one of the first coordinated care programs in Central Europe and the first in Poland to be widely and consistently implemented. It has been and continues to be a significant weapon in the fight against deadly pneumonia that is the aftermath of COVID-19 infection (Pelc, 2021). Finally, the sudden emergence of

COVID-19 has made managing chronic wounds much more difficult. Therefore, the conflict between the need to control the injury and the risk of contracting infectious diseases during COVID-19 prevention and control appears to be a dilemma for patients with chronic wounds (Wang et al., 2020, 1). According to Marek Kucharzewski (2020), M.D., head of the Chronic Wound Treatment Institute at the Dr. Stanisław Sakiel Burn Treatment Center in Siemianowice Śląskie, a patient's neglect of a chronic wound in the era of the coronavirus pandemic can lead to many serious complications, including amputation of the limb. Therefore, it is essential to continuously and dynamically develop the program of comprehensive treatment of chronic wounds to monitor the condition of sick patients on an ongoing basis.

Comprehensive coordinated care after myocardial infarction (KOS-Zawał)

An example of the implementation of value-based medicine is the comprehensive program of coordinated care after myocardial infarction (KOS-Zawał) or otherwise the Managed Care in Acute Myocardial Infarction (MC-AMI) (Wita et al., 2019a, 551; 2019b, 8). MC-AMI is the Polish Cardiac Society, National Health Fund, and Ministry of Health program implemented in the fourth quarter of 2017 to improve hospital and post-discharge care in acute myocardial infarction patients (Gąsior et al., 2022, 303; Wilkosz et al., 2021). This program arose because of Poland's high morbidity and mortality from cardiovascular diseases. This innovative program aims to reduce the number of deaths and disabilities as well as speed up recovery and return to working life. The KOS-Zawał program contains revascularization, cardiological rehabilitation, and implantation of an implantable cardioverter-defibrillator. This program also includes patient education and comprehensive specialist outpatient care within 12 months after a heart attack (Feusette et al., 2019, 568).

From 1 October 2017 to 31 August 2018, 521 patients with myocardial infarction treated at the Department of Cardiology of the University Hospital in Opole took part in the KOS-Zawał program. From 22 June 2018 to 31 August 2018, 150 consecutive patients entered the study. Based on the obtained results, participation in the program improved the patient's health and increased their sense of security after a history of myocardial infarction. Most patients thought all the program elements were essential and assessed them well. Many patients have reported wanting to continue the program 12 months after the cardiovascular event (Feusette et al., 2019, 570).

The study (Kubielas, Diakowska and Uchmanowicz, 2022, 321) showed that patients in the KOS-Zawał group were significantly less likely to die than patients in the group without KOS-Zawał. This study showed that the KOS-Zawał program reduces the risk of death in patients after myocardial infarction by 29%. According to Wita et al. (2020), the participation of patients in the MC-AMI program caused a 38% reduction in mortality in the 12-month follow-up period. In

a 3-month follow-up, this program reduced significant adverse cardiovascular by 45% (Wita et al., 2019a, 551).

To sum up, the implementation of the nationwide program of comprehensive coordinated care after myocardial infarction (KOS-Zawał) was to extend the life of patients. A unique feature of this program is the requirement to report indicators that demonstrate the quality of medical care and have the most significant impact on patient prognosis (Jankowski, Legutko and Tomkiewicz-Pająk, 2021, 59). In the future, i.e., the post-pandemic reality, these indicators will be able to be analyzed by the National Health Fund to confirm the validity of introducing value-based medicine in Poland.

POZ PLUS model

POZ PLUS or PHC (Primary Health Care) PLUS is a model developed with the involvement of many stakeholders, including the Ministry of Health and the National Health Fund. This model of coordinated patient care at the primary care level began piloting in 2018. The model contains prevention, care coordination, and chronic diseases. POZ PLUS is an added value for patients because the program includes health balances during which medical personnel inquires in detail about their health status, past illnesses, and those that often occurred in the family. The staff orders some basic tests and invites patients to visit a GP with the results (Narodowy Fundusz Zdrowia, 2019).

The POZ PLUS model includes a team consisting of a doctor, a nurse, health educators, nutritionists, and physiotherapists. These new teams are responsible for coordinating patient care pathways, including post-hospital treatment and rehabilitation. The model employs special coordinators who support the patient and the entire primary care team in the correct flow of information between the patient and the team and between the group and other healthcare providers involved in the care process (Badora-Musiał, Sagan, Domagała and Kowalska-Bobko, 2021, 186).

The quality and effectiveness of the POZ PLUS model proved the indicators of patient satisfaction surveys and many other indicators, such as the percentage of hospitalized patients or specialist consultations outside the program. The program's basic national statistics are developed, periodically updated, and presented on the website of the National Health Fund dedicated to this program (Akademia NFZ, n.d.).

Comprehensive Treatment of Chronic Wounds (KLRP-1 and KLRP-2)

Comprehensive Treatment of Chronic Wounds 2 (KLRP-2) improves the quality of care for a patient with a chronic wound, the basic assumption of which is effective wound closure. Contrary to the current scope of the Comprehensive Treatment of Chronic Wounds (KLRP-1), KLRP-2 carries out through the comprehensive application of available effective treatment methods, integration of the

service provision process with the participation of outpatient and inpatient services (hospital), and optimization of the costs incurred by monitoring and managing the treatment process at the involvement of the ICT system (dedicated to the application process) for the transfer and evaluation of medical data (Mroczek, 2020; Narodowy Fundusz Zdrowia, 2020). The application will enable contact in the relationships between medical personnel and medical personnel, as well as between the recipient of the service and medical personnel (Rokicińska, 2021).

The criterion for qualifying a patient for the KLRP-2 service is the diagnosis of a chronic wound, i.e., one that has not healed more than six weeks after its occurrence despite applying local treatment. The National Health Fund introduced the so-called color wound rating system to define the healing stage of a chronic injury. Depending on the condition of the damage and the treatment effects, the patient moves to a given next step, where he receives appropriate services assigned therein (Czeczelewska, 23.02.2021).

According to Mitura (2021, 1077), comprehensive treatment of chronic wounds based on a dedicated program with an experienced, multidisciplinary team of specialists allows for much better results in wound area reduction. It can also be an effective treatment. Frequent, scheduled outpatient visits, access to inpatient treatment, and regular patient education based on a standardized form improve treatment outcomes.

Limitations of implementing value-based medicine in Poland

Further development of the above three examples of implementing the VBM concept in the Polish health care system is not without certain limitations. Due to the aging of the population, the incidence of chronic diseases is increasing. As well as the pace of introducing innovations in medicine, one can notice the intention of payers to reduce expenses and cut costs. This situation, in turn, creates a vicious circle of growing expectations of the health care system and frustration on the part of medical staff, related, among other things, to the lack of free choice of the most effective treatment method. This situation, in turn, translates into the quality of services while increasing patient dissatisfaction (Skrzekowska-Baran, 2019, 14). These budgetary constraints negatively affect the functioning of the KOS-Zawał, POZ PLUS, and KLRP-2 programs.

In addition to the financial constraints indicated above, one must first deal with organizational issues in the Polish healthcare system to focus on value. The patient has a chance to receive complete treatment in the scope of the selected program only thanks to specially dedicated interdisciplinary units with deep knowledge and a wide range of skills. On the one hand, such organizational changes will facilitate development of the knowledge necessary to obtain better short- and long-term treatment outcomes. On the other hand, it will allow the measurement and optimization of care costs (Skrzekowska-Baran, 2019, 23).

Other limitations in the effective functioning of the VBM model in Poland are the amount and structure of resources, and the method of managing health processes. Małgorzata Gałązka-Sobotka, director of the Institute of Healthcare Management and director of the Center of Value-Based Healthcare (CoVBHC) at the Lazarski University, without good management in health care, it is impossible to achieve satisfactory results of therapy. One can fully develop the VBM model in our country only when all health care system participants agree to redefine its fundamental goal. This goal is not to guarantee economic efficiency but to provide patients with the highest medical effectiveness through the efficient use of resources (Kuta, 2020).

Conclusions

The Polish healthcare system is challenging due to the ongoing COVID-19 pandemic, with the mutating SARS-CoV-2 virus. Secondly, over two million refugees have migrated to Poland due to the war in Ukraine, which has burdened the health system. Considering these conditions, it seems an excellent solution to modify the current healthcare system into a value-oriented model. This solution would first translate into improving the quality, availability, and treatment outcomes. Secondly, it could translate into enhanced coordination and integration of therapeutic processes. Finally, value-based medicine would allow for increased cost-effectiveness.

Building a patient-centered and value-oriented healthcare system requires constant monitoring of service quality. For this purpose, there are various solutions and tools: patient surveys after medical appointments, analysis of complaints, information from medical professionals, and phone calls from patients. Such a feedback analysis improves the quality of medical services and reduces the waiting time for a medical visit.

Narrative, integrative, and evidence-based medicine can significantly complement the value-based medicine model. Integrating these elements with value-based medicine can bring tangible benefits to the health system, medical professionals, and patients.

Regarding the research problem formulated in the article, the author determined that the Polish health care system implements the VBM model in the following programs: KOS-Zawał, POZ PLUS, KLRP-1/KLRP-2, as well as KOZ, KAOZ, KAOS-Cukrzyca, DOK, KOC, coordinated nephrology care, and oncology package. By verifying the research questions, the author presented the current state of the first three programs mentioned. Moreover, the author states, based on the announcements of the National Health Fund, that there is a chance to continue these programs in a post-pandemic reality. Still, they require changes, modifications, and further improvement. According to the author, these discussed pro-

grams can be the starting point for developing other programs of this type, where value for the patient is crucial. This value comes from organizing multidisciplinary teams around the patient's complete medical profile, systematic transfer of medical data, monitoring costs, identifying areas for improvement, and sustained improvement in care delivery processes.

In conclusion, the main contribution of this study is gathering information about all value-based health programs that have been implemented, to a greater or lesser extent, on Polish soil to date (the author also provided the names of these programs). Another one is presenting three selected value-based programs implemented in the Polish health system, which, in a post-pandemic reality, will work ideally to improve the population's health.

The study also contains some limitations. Firstly, the author did not present all the value-based health programs mentioned in the article. This impacts the conclusions and recommendations and is, indeed, material for future studies. Secondly, the author used only three scientific databases — Taylor & Francis Online, PubMed, and Google Scholar — to gather scientific literature, which probably limited their ability to conduct a comprehensive research theoretical framework. In the future, other researchers could use more databases to deepen their analyses of value-based medicine, considering evidence-based, narrative, and integrative medicine. Thirdly, the access to some publications was restricted, either by logging in with an institutional account or by a paywall. It is not out of the question that these texts could be crucial in discussing the issues of the article's topic. Nonetheless, these access limitations did not hinder the study.

Given the study's limitations, this article can be a basis for more complete research in the future. A new study could include a literature review based on other scientific databases and a presentation of other mentioned, but not discussed in the article, value-based health programs in the Polish healthcare system. According to the author, it would be possible to integrate evidence-based, narrative, and integrative medicine issues with the value-based medicine model. This could help develop an innovative, holistic approach to address the patient's treatment.

References

Akademia NFZ. (n.d.) *Przygotowanie, przetestowanie i wdrożenie do systemu opieki zdrowotnej organizacji opieki koordynowanej (OOK) Etap II Faza pilotażowa — model POZ PLUS*. Retrieved April 2, 2022 from https://akademia.nfz.gov.pl/poz-plus/.

Altamirano-Bustamante, M.M., Altamirano-Bustamante, N.F., Lifshitz, A., Mora-Magaña, I., Hoyos, A. de, Avila-Osorio, M.T., Quintana-Vargas, S., Aguirre, J.A., Méndez, J., Murata, C., Nava-Diosdado, R., Martínez-González, O., Calleja, E., Vargas, R., Mejía-Arangure, J.M., Cortez-Domínguez, A., Vedrenne-Gutiérrez, F., Sueiras, P., Garduño, J., Islas-Andrade, S., Salamanca, F., Kumate-Rodríguez, J., Reyes-Fuentes, A. (2013). Promoting networks between evidence-based medicine and values-based medicine in continuing medical education. *BMC Medicine*, 11(39). DOI: 10.1186/1741-7015-11-39.

Assefa, Y., Gilks, C.F., Reid, S., Pas, R. van de, Gete, D.G., Van Damme, W. (2022). Analysis of the COVID-19 pandemic: lessons towards a more effective response to public health emergencies. *Globalization and Health*, 18(10). DOI: 10.1186/s12992-022-00805-9.

Badora-Musiał, K., Sagan, A., Domagała, A., Kowalska-Bobko, I. (2021). Testing the 2017 PHC reform through pilots: Strengthening prevention and chronic care coordination. *Health Policy*, 125(2), 185–190. DOI: 10.1016/j.healthpol.2020.10.014.

Bae, J.M. (2015). Value-based medicine: concepts and application. *Epidemiology and Health*, 37, e2015014. DOI: 10.4178/epih/e2015014.

Brown, G.C., Brown, M.M., Sharma, S. (2003). Value-based medicine: Evidence-based medicine and beyond. *Ocular Immunology and Inflammation*, 11(3), 157–170. DOI: 10.1076/ocii.11.3.157.17355.

Center for Value-Based Medicine. (2020). *Value-Based Medicine.* Retrieved February 22, 2022 from https://www.valuebasedmedicine.com/value-based-medicine/

Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W-C., Wang, C-B., Bernardini, S. (2020). The COVID-19 pandemic. *Critical Reviews in Clinical Laboratory Sciences*, 57(6), 365–388. DOI: 10.1080/10408363.2020.1783198.

Czeczelewska, E. (23.02.2021). *Nowe świadczenie "Kompleksowe Leczenie Ran Przewlekłych 2" (KLRP-2)*. Retrieved April 21, 2022 from https://nursing.com.pl/artykul/nowe-swiadczenie-kompleksowe-leczenie-ran-przewleklych-2-klrp2-6034ca39fae0a74770c273a4.

Czerska, I. (2021). Narrative medicine as an opportunity to humanize healthcare in a post-pandemic reality. *European Research Studies Journal*, 24(3), 949–956. DOI: 10.35808/ersj/2393.

Czerska, I., Trojanowska, A., Korpak, T. (2020). Lifestyle medicine as a pro-health trend of the modern prosumer. *Ekonomia — Wroclaw Economic Review*, 26(3), 23–42. DOI: 10.19195/2658–1310.26.3.2.

Czerska, I., Skweres-Kuchta, M. (2021). Integrative medicine as a new treatment model and the future of health care systems in the world in the context of rare diseases. *European Research Studies Journal*, 24(2B), 800–809. DOI: 10.35808/ersj/2265.

Feusette, P., Gierlotka, M., Krajewska-Redelbach, I., Kamińska-Kegel, A., Warzecha, S., Kalinowska, L., Szlachta, J., Kutkiewicz-Moroz, K., Sacha, J., Wojdyła-Hordyńska, A., Bryk, R., Jankowski, P., Gąsior, M. (2019). Comprehensive coordinated care after myocardial infarction (KOSZawał): A patient's perspective. *Kardiologia Polska*, 77(5), 568–570. DOI: 10.5603/KP.a2019.0038.

Gąsior, M., Wita, K., Buszman, P., Mizia-Stec, K., Kalarus, Z., Nowalany-Kozielska, E., Sikora, J., Wojakowski, W., Gołba, K., Milewski, K., Pączek, P., Cieśla, D., Gąsior, Z., Rozentryt, P., Nessler, J., Jankowski, P., Niedziela, J.T. (2022). Managed Care after Acute Myocardial Infarction (MC-AMI) improves prognosis in AMI survivors with pre-existing heart failure: A propensity score matching analysis of Polish nationwide program of comprehensive post-MI care. *Kardiologia Polska*, 80(3), 302–306. DOI: 10.33963/KP.a2022.0029.

Grassi, L., McFarland, D., Riba, M.B. (2022). Medical professionalism and physician dignity: are we at risk of losing it? In L. Grassi, D. McFarland, M.B. Riba (eds), *Depression, Burnout and Suicide in Physicians* (11–25). Springer: Cham. DOI: 10.1007/978-3-030-84785-2_2.

Jain, P. (2021). Impact of COVID-19 pandemic on global healthcare systems and the role of a new era of global collaborations. *Sushruta Journal of Health Policy & Opinion*, 14(3), 1–5. DOI: 10.38192/14.3.2.

Jankowski, P., Legutko, J., Tomkiewicz-Pająk, L. (2021). Kompleksowa opieka po zawale serca. In S. Bartuś (ed.), *Ostre zespoły wieńcowe* (54–60). Warszawa: Medical Tribune Polska.

Jeżewski, T. (2021). *Medycyna integracyjna, czyli coś więcej niż tylko kolejna recepta*. Retrieved March 6, 2022 from https://tomaszjezewski.pl/medycyna-integracyjna/?fbclid=IwAR2QlcoG00-2DNG8fkk4Bj13Wu0qJ5eJU1ENSHpBOPfgrq8AkpRlZLoI_FM.

Khetrapal, S., Bhatia, R. (2020). Impact of COVID-19 pandemic on health system & Sustainable Development Goal 3. *Indian Journal of Medical Research*, 151(5), 395–399. DOI: 10.4103/ijmr.IJMR_1920_20.

Kubielas, G., Diakowska, D., Uchmanowicz, I. (2022). Survival analysis of patients with acute coronary syndrome receiving comprehensive coordinated care after myocardial infarction (KOS-Zawał). *Kardiologia Polska*, 80(3), 315–321. DOI: 10.33963/KP.a2022.0035.

Kucharzewski, M. (2020). *Jak w dobie pandemii wirusa COVID-SARS19 dbać o rany przewlekłe?* [Interview]. Retrieved July 27, 2022 from https://www.naszejastrzebie.pl/wszystkie/informacje/jak-w-dobie-pandemii-wirusa-covid-sars19-dbac-o-rany-przewlekle.

Kus, D., Kępa, B., Zaprutko, T., Ratajczak, P., Paczkowska, A., Kopciuch, D., Rudzka, A., Nowakowska, E. (2018). Evidence-based medicine (EBM) in the realities of Polish ophthalmology. *Polish Review of Health Sciences*, 3(56), 340–346. DOI: 10.20883/ppnoz.2018.50.

Kuta, W. (2020). *Koncepcja VBHC integruje wszystkich uczestników systemu ochrony zdrowia*. Retrieved June 28, 2022 from https://www.rynekzdrowia.pl/Rynek-Zdrowia/Koncepcja-VBHC-integruje-wszystkich-uczestnikow-systemu-ochrony-zdrowia,202026,3.html.

Little, M., Lipworth, W., Gordon, J., Markham, P. (2011). Another argument for values-based medicine. *The International Journal of Person Centered Medicine*, 1(4). DOI: 10.5750/ijpcm.v1i4.138.

Marzorati, C., Pravettoni, G. (2017). Value as the key concept in the health care system: how it has influenced medical practice and clinical decision-making processes. *Journal of Multidisciplinary Healthcare*, (10), 101–106. DOI: 10.2147/JMDH.S122383.

Mitura, K. (2021). An innovative national program for comprehensive chronic wound therapy and its impact on treatment outcomes. *World Journal of Surgery*, 45, 1071–1079. DOI: 10.1007/s00268-020-05901-8.

Mroczek, A. (2020). *Projekt zarządzenia NFZ — świadczenia zdrowotne kontraktowane odrębnie*. Retrieved April 3, 2022 from https://www.cowzdrowiu.pl/aktualnosci/post/projekt-zarzadzenia-nfz-swiadczenia-zdrowotne-kontraktowane-odrebnie

Najwyższa Izba Kontroli. (2019). *System ochrony zdrowia w Polsce — stan obecny i pożądane kierunki zmian [panel ekspertów]*. Retrieved March 4, 2022 from https://www.nik.gov.pl/aktualnosci/system-ochrony-zdrowia-w-polsce-stan-obecny-i-pozadane-kierunki-zmian-relacja-live.html.

Narodowy Fundusz Zdrowia. (2019). *POZ PLUS — wartość dodana dla pacjentów*. Retrieved April 2, 2022 from https://www.nfz.gov.pl/aktualnosci/aktualnosci-centrali/poz-plus-wartosc-dodana-dla-pacjentow,7489.html.

Narodowy Fundusz Zdrowia. (2020). *Zarządzenie nr 213/2020/DSOZ Prezesa Narodowego Funduszu Zdrowia z dnia 31.12.2020 r*. Retrieved April 3, 2022 from https://www.nfz.gov.pl/zarzadzenia-prezesa/zarzadzenia-prezesa-nfz/zarzadzenie-nr-2132020dsoz,7285.html.

Pelc, K. (2021). *Zapalenie płuc — pandemia zwiększa liczbę zgonów. Korzyści z programu KOS-Zawał*. Retrieved July 26, 2022 from https://www.radiokrakow.pl/audycje/zapalenie-pluc-pandemia-zwieksza-liczbe-zgonow-korzysci-z-programu-kos-zawal.

Porter, M.E., Olmsted Teisberg, E. (2006). *Redefining Health Care: Creating Value-based Competition on Results.* Boston: Harvard Business Review Press.

Pracodawcy Medycyny Prywatnej, Deloitte. (2020). *Zdrowie Polaków po pandemii. Co możemy zrobić razem. Raport*. Retrieved April 3, 2022 from https://medycynaprywatna.pl/wp-content/uploads/2021/01/FINA%C5%81_raport-PMP-2.pdf.

Rađenović, T., Radivojević, V., Krstić, B., Stanišić, T., Živković, S. (2022). The efficiency of health systems in response to the COVID-19 pandemic: Evidence from the EU countries. *Problems of Sustainable Development*, 17(1), 7–15. DOI: 10.35784/pe.2022.1.01.

Rajkumar, R.V. (2022). Facilitating accountable critical thinking (FACT): A perspective from a novel facet of critical medical anthropology. *Galore International Journal of Applied Sciences and Humanities*, 6(3), 1–12. DOI: 10.52403/gijash.20220701.

Rokicińska, A. (2021). *Kompleksowe Leczenie Ran Przewlekłych — finansowanie po nowemu*. Retrieved April 0, 2022 from https://www.cowzdrowiu.pl/aktualnosci/post/kompleksowe-leczenie-ran-przewleklych-finansowanie-po-nowemu

HCC Online: POZ była ostoją systemu ochrony zdrowia w czasie epidemii. (2020). Retrieved July 26, 2022 from https://www.rynekzdrowia.pl/Polityka-zdrowotna/HCC-Online-POZ-byla-ostoja-systemu-ochrony-zdrowia-w-czasie-epidemii,208837,14.html.

Shamasunder, S., Holmes, S.M., Goronga, T., Carrasco, H., Katz, E., Frankfurter, R., Keshavjee, S. (2020). COVID-19 reveals weak health systems by design: Why we must remake global health in this historic moment. *Global Public Health*, 15(7), 1083–1089. DOI: 10.1080/17441692.2020.1760915.

Skrzekowska-Baran, I. (2019). Wprowadzenie do Value Based Helthcare. In E. Nojszewska, J. Walewski (eds.), *Nowa definicja ochrony zdrowia i jej wpływ na poprawę jakości leczenia. Raport otwarcia Value Based Healthcare* (13–23). Warszawa: Polska Koalicja Medycyny Personalizowanej.

Sozański, B., Ćwirlej-Sozańska, A., Wiśniowska-Szurlej, A., Jurek, K., Górniak, P., Górski, K., Englert-Bator, A., Perenc, L. (2021). Psychological responses and associated factors during the initial stage of the coronavirus disease (COVID-19) epidemic among the adult population in Poland: A cross-sectional study. *BMC Public Health*, 21, 1929. DOI: 10.1186/s12889-021-11962-8.

Vandenberghe, J. (2008). Grenzen aan evidence-b(i)ased psychiatrie? *Tijdschrift voor Psychiatrie*, 50(6), 377–385.

Wang, R., Peng, Y., Jiang, Y., Gu, J. (2020). Managing chronic wounds during novel coronavirus pneumonia outbreak. *Burns & Trauma*, 8, tkaa016. DOI: 10.1093/burnst/tkaa016.

Wilkosz, K., Wybraniec, M., Wita, M., Fluder, J., Malta, M., Chmurawa, J., Kubicjus, A., Wita, K. (2021). Does gender affect the outcomes of patients in program of managed care for acute myocardial infarction. *Journal of Rehabilitation Medicine*, 53, jrm00238. DOI: 10.2340/16501977-2848.

Wita, K., Kułach, A., Wita, M., Wybraniec, M.T., Wilkosz, K., Polak, M., Matla, M., Maciejewski, Ł., Fluder, J., Kalańska-Łukasik, B., Skowerski, T., Gomułka, S., Szydło, K. (2019a). Managed Care after Acute Myocardial Infarction (KOS-zawał) reduces major adverse cardiovascular events by 45% in 3-month follow-up — single-center results of Poland's National Health Fund program of comprehensive post-myocardial infarction care. *Archives of Medical Science*, 16(3), 551–558. DOI: 10.5114/aoms.2019.85649.

Wita, K., Wilkosz, K., Wita, M., Kułach, A., Wybraniec, M.T., Polak, M., Matla, M., Maciejewski, Ł., Fluder, J., Kalańska-Łukasik, B., Skowerski, T., Gomułka, S., Turski, M., Szydło, K. (2019b). Managed Care after Acute Myocardial Infarction (MC-AMI) — a Poland's nationwide program of comprehensive post-MI care — improves prognosis in 12-month follow-up. Preliminary experience from a single high-volume center. *International Journal of Cardiology*, 296, 8–14. DOI: 10.1016/j.ijcard.2019.06.040.

Wita, K., Kułach, A., Sikora, J., Fluder, J., Nowalany-Kozielska, E., Milewski, K., Pączek, P., Sobocik, H., Olender, J., Szela, L., Kalarus, Z., Buszman, P., Jankowski, P., Gąsior, M. (2020). Managed Care after Acute Myocardial Infarction (MC-AMI) reduces total mortality in 12-month follow-up-results from Poland's National Health Fund program of comprehensive post-MI care — A population-wide analysis. *Journal of Clinical Medicine*, 9(10):3178. DOI: 10.3390/jcm9103178.

Woźny, A. (2021–2022). Niełatwa sztuka przywracania głosu. *Medium*, 12–1(376–377), 23–25.

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.5

Edyta Ropuszyńska-Surma
ORCID: 0000-0002-0163-8810
Wroclaw University of Science and Technology
edyta.ropuszynska-surma@pwr.edu.pl

Magdalena Węglarz
ORCID: 0000-0003-4201-7225
Wroclaw University of Science and Technology
magdalena.weglarz@pwr.edu.pl

Piotr Kubiński
ORCID: 0000-0002-9250-2141
Wroclaw University of Science and Technology
piotr.kubinski@pwr.edu.pl

The role of networking in building a start-up business model

Date of submission: 9.06.2022; **date of acceptance:** 16.08.2022

JEL classification: M130, D210

Keywords: business model (BM), canvas model, cooperation network, start-up, innovation

Abstract

The aim of this paper is two-fold. It focuses on the identification of crucial elements of the business model for the development of start-ups and for their potential to create innovation, as well as the influence of network cooperation on the components of their business model. The canvas model is used to illustrate the research outputs. Additionally, the research aimed at identifying what start-ups expect from the networks in which they exist (e.g., technological parks) in terms of creating appropriate conditions supporting innovations. The study was done using three expert panels in which 28 start-ups participated. The research and its results are qualitative and are presented as a case study. The research was conducted by the authors in 2019 and concerns start-ups participating in cooperation networks, but its results could be interesting not only for start-ups, but also for everyone interested in the issues of cooperation between various entities and its potential to stimulate innovation.

Introduction

The current most innovative economies in the world, which include those of the USA, Finland, and Israel, owe their competitiveness to start-ups. Silicon Valley has become a global model for start-ups, along with ones described in the book *Start-up Nation: The Story of Israel's Economic Miracle* (Senor and Singer, 2011). However, under strictly market conditions, they have relatively little chance of bringing their innovative ideas to fruition or of developing. Therefore, an important role is played by cooperation networks and institutions that support the establishment of network cooperation, i.e., to match up business partners — so, for instance, start-ups with investors. These institutions[1] create an ecological environment which combines new scientific discoveries (knowledge) with the ecological business environment.

Research on business models (BMs) began in the 1990s, and since then, many business models have been designed for innovative ventures (Muehlhausen, 2018; Osterwalder and Pigneur, 2010). It has been shown more and more clearly that enterprises working with innovations and in industries going through an intensive stage of research, as well as new growth sectors of enterprises (IT, biotechnology, semiconductors, sound systems, electronic displays, and plastic materials) operate on innovative BMs. These enterprises specialise in the management of intellectual property rights and function in the "market for ideas" by offering licences for the rights to technological innovation, and not by independently commercialising their innovations (Massa and Tucci, 2015).

The most well-known business models are: the open business model (Chesbrough, 2007, 22), the Business Model Canvas (BMC) (Osterwalder and Pigneur, 2010) and Lean Start-up Manifesto (LSM).

Research conducted over the past 25 years has shown the important role played by start-ups in the creation, implementation, and diffusion of technological and social innovations. These companies need not only financial support, but also legal, business, and consulting assistance as well as an environment more stable than that of the market to test their products and cross-check BMs.

The literature review shows there are no studies which could demonstrate the impact of the cooperation network on the business model, how the BM changes under the influence of the cooperation network, or if the benefits of participation in the cooperation network are reflected in the BM created. Therefore, an interesting issue is the identification of those components of the business model which are crucial for the development of start-ups and for their potential to create innovation.

The article assumes that a start-up is an entity which does not yet have a defined business model and is still seeking one. Since start-ups often operate under network

[1] For example: business incubators, science parks, technology parks, entrepreneurship accelerators and clusters.

conditions, e.g., in a cluster (Silicon Valley) or in technology parks, an interesting research question is one concerning the impact of cooperation networks on start-up business models and on the components of the model. The aim of this paper is the identification of crucial elements of the business model for the development of start-ups and for their potential to create innovation, as well as the influence of network cooperation on the components of their business models. These issues were studied in late 2019 in three technology parks in Poland: the Wrocław Technology Park (WTP), the University of Zielona Góra Science and Technology Park (UZSTP), and the Euro-Centrum Science and Technology Park in Katowice (ECSTPK).

1. Start-ups and cooperation networks — literature review

This section gives a review of the crucial literature focusing on selected issues: start-ups, cooperation networks, the cooperation of start-ups with selected entities, creating quasi-market conditions by institutions such as science parks, technology parks and clusters.

First of all, the definition of start-up should be taken into consideration. Colloquially, every newly established business is called a start-up. Steve Blank and Bob Dorf (2012, 34) define a start-up as a temporary organisation "searching for a repeatable and scalable business model." Other authors indicate that start-ups are characterised by uncertainty as to the conditions of their functioning (Reis, 2011) and achievement of success (Robehmed, 2013). There is a lot of research focusing on start-ups as a trigger for innovation in regions (e.g. Silicon Valley) or countries (e.g. Senor and Singer, 2011). Many periodical reports are published which present the characteristics of start-ups (e.g. their size, number of staff, type of business, legal form, age) and the maturity of the ecosystems in which they operate (Deloitte, 2016). The conditions of these ecosystems and their forms (e.g. technological parks) are investigated in considerable depth. Other research on the start-ups concerned various factors and their effect on start-ups. For example, the latest research considers an additional factor, the coronavirus pandemic.

> The perception of the impact of the pandemic on the operation of start-ups is divided: 39% of them believe it to be negative, while 34% assess it as positive. Most start-ups do not intend to lay off employees (63%), while only 6% plan to reduce their workforce. More than a quarter of companies have changed their business model, seeing new revenue opportunities or a change in customer relationships. As many as 44% of the start-ups surveyed declared that they currently have no income. Almost one-third of start-ups (32%) now generate revenues greater than a year ago. When financing the development of their business, as many as 80% of start-ups use their own resources. (Arwaj et al., 2020)

Research conducted in 2020 shows that start-ups offer: a blend (of product and service) — 37%, product (32%), service (31%). Start-ups are almost equally divided into those selling physical products (48%) and digital products (52%) (Arwaj et al., 2020).

A second important term is cooperation network. Research on *cooperation* and *collaboration* can be distinguished in the context of network cooperation, focusing on macro- (Kastelle and Steen, 2015), meso-, and microeconomic effects. The subject of the research are the benefits and threats for entities participating in such networks (Knop, 2013), the impact of network cooperation on the competitiveness and innovation of countries, regions, or enterprises, as well as on the development of science. A separate type of research is one concerning the structure of a cooperation network and the strength of relationships between network participants (nodes).

Joseph Schumpeter, Michael E. Porter, and other authors indicated that networks favour the creation of innovation. "Innovation happens in networks — networks of the brain, networks of people and networks of firms" (Kastelle and Steen, 2015, 117). In 1973, Mark Granovetter studied the strength of connections in networks and found that weak ties promote information transfer and are a source of research. On the other hand, strong ties and established connections probably convey redundant information (Kastelle and Steen, 2015, 109). A more complete review of the literature regarding research on the effects of strong and weak links was written by Mark Dodgson (2015). Information, often obtained as a result of new collaboration, is an inspiration for innovation. Network structures are a determinant of innovation, and the development of the system (and implicitly also of enterprises) takes place through innovation (Kastelle and Steen, 2015, 109, 117). Shan et al. (1994) examined the relationship between cooperation among companies and the innovations created by start-ups in the biotechnology industry. Several control variables were associated with collaboration and innovation. However, the results only confirmed that cooperation among companies influences innovation. Dittrich et al. (2007) and Dodgson (2015) highlight the important role of cooperation in terms of a strategic alliance of venture capital, research and development consortiums, a partnership between universities and industry and between government and industry in creating innovation, even in companies that are already technologically advanced. Dodgson (2015) analyses collaboration from the perspective of enterprise and innovation. He attempts to identify its contribution to complementarity, encouraging learning, and developing the organisation's potential, as well as dealing with uncertainty and complexity. Another example of a network are the industrial networks known as clusters, which achieve success due to close social relations between suppliers, producers, customers, and institutions (Bathelt, 2002). The literature (Centola, 2013) also examines the issue of joint activities of small companies in large groups.

Much research has been carried out on cooperation networks, the impact of various factors on the innovativeness of start-ups, or selected components of the business model. Conclusions from the study by Joel Baum, Tony Calabrese and Brian Silverman (2000) carried out for the biotechnology sector indicate that participation in alliances as well as the size of the network and the effectiveness of

its operation have a positive impact on start-up development. Veronique Schutjens and Erik Stam (2003) analysed the evolution of a network made up of new companies for the first three years following its establishment. The network was defined as the main business relationship in terms of sales, delivery, outsourcing, and cooperation. One of the main findings was that the behaviour of innovative companies influences the nature of the network. In turn, Cap (2018) discusses various mechanisms developed to help start-ups in different phases of their life cycle and the tools for creating a solid and effective business model of incubation from the very start.

An interesting organisational form supporting start-ups are incubators which, by offering office space, financing, and basic services to start-ups, allow them to reduce their operating costs and focus on product or service development (Hansen et al., 2000). Incubators have systems that encourage networking by creating more favourable conditions in the business environment, enable start-ups to use production and human resources more efficiently as well as the continuous development of knowledge-based business along with the activities carried out help companies in searching for new opportunities for cooperation with partners (Milius, 2008). There are also disadvantages of location at an incubator (McAdam and Marlow, 2007), mainly relating to privacy, intellectual property rights, and competitive strategies. It was also observed that as the company matures, it becomes more open to support and advice from the incubator management. The research on the importance of the network for start-ups and the role of incubators in this networking process presents that start-ups often resort to the network to work on their poor reputation and limited resources (Galvão, Marques, Franco and Mascarenhas, 2019). Incubators promote events that encourage the creation of partnerships and networks, between both start-ups within the same incubator and with external institutions. Most collaborative networks are informal and meet the needs which start-ups are unable to fulfil on their own. In turn, research by Frank J. van Rijnsoever (2020) was aimed at determining the impact of incubators on the occurrence of what are called weak network problems, by which the author understands the lack of links between the knowledge and business subsystem in the entrepreneurial system in which start-ups operate. The weak links in the financial support network (e.g., start-ups and venture capitals), and more specifically the chances of entities making connections, develop depending on the level/state of the conditions in which start-ups function, i.e., the ecosystem (Rijnsoever, 2020). He distinguished four states: undeveloped, emerging, maturing, and developed. The more mature the ecosystem, the better the chances of connections. By supporting only 20% of all start-ups, incubators can effectively create a network between start-ups and venture capitals (VC). The results he gained highlight the important role of incubators in creating conditions for establishing network cooperation both between start-ups and between start-ups and VCs.

Incubation is an interdependent process of interaction that develops between the incubator, the incubated (the start-up), and external network actors (Hakansson et al., 2009, as cited in Petrucci, 2018). The existing network connections embed a new enterprise in the established configurations of resources and activities (Petrucci 2018). Incubated enterprises should be relatively homogeneous, because heterogeneity could lead to problems establishing mutual business contacts.

Research was also carried out on start-up accelerators (Seet, Jones, Oppelaar and Corral de Zubielqui, 2018) and science parks, for instance by Leite, A. Silva, J. Silva and S. Silva (2020).

Klaus Fichter (2012) introduced a new concept related with cooperation — "innovation communities," which is an informal personal network of innovators. Empirical research in innovation management has shown that cooperation and effective networking are important factors of success in almost all innovation processes (Gloor, Dorsaz and Fuehres, 2011).

Another aspect studied was the effects of cooperation between business and science (Domańska, 2018). The start-ups founded by scientists more readily cooperate with universities (Stuart, Ozdemir and Ding, 2007). This cooperation translates into greater commercialisation of research results, and more intensive cooperation between start-ups and universities results in faster development and higher revenues for the start-ups. Formal and informal means of cooperation between small and medium enterprises (SMEs) in the post-communist Polish economy were also studied. Muent (1999) described how small businesses in academia use their social relationship networks to deal with some of the problems that are typical of SMEs. The paper highlighted the importance of personal contacts both between technical universities and companies as well as between individual companies. It was demonstrated that the use of these interpersonal relationships can lead to an effective transfer of knowledge between universities and the business sector.

The cooperation between start-ups and a large partner produces the following positive effects: product development, participation in a technology cluster, or the effects of scale, which all lead to a win-win situation (Rothaermel, 2002). It was discovered that the cooperation between corporations and start-ups has a positive impact on the digital transformation of corporations. The authors explicitly state that a corporation may need a portfolio of start-ups in order to carry out a more holistic transformation of its business (Steiber and Alänge, 2021). Research was conducted by Baum et al. (2000) in which they showed that cooperation between start-ups and large corporations with an established market position gives greater opportunities for organisational learning and reduces the risk of competition within the network. Cooperation with direct competitors (alliances in a narrow sense) has a negative correlation, i.e., start-ups show worse results (Baum et al., 2000). From point of view of this paper the research conducted by Monika Sheoran and Divesh Kumar (2020) seems important. They proposed a model showing the relationship between start-ups' concern for the environment and their efforts to create

networks. The research was carried out in incubation centres at various institutions in Rajasthan, India. Environmental orientation was identified as a highly important aspect of networking for start-ups.

The most frequently used research methods for cooperation networks and start-ups are qualitative methods, e.g. semi-structured interviews (Muent, 1999; Langley, Zirngiebl, Sbeih and Devoldere, 2017; Lopes, Farinha, J. Ferreira and F. Ferreira, 2018) and case studies (Kassen, 2018; Domańska, 2018; Leite et al., 2020; Steiber and Alägne, 2021). At the same time, when studying social networks, the quantitative methods are mostly used, such as the network analysis method (SNA: Social Network Analysis) (Scott, 2013) and its derivatives.

2. Research method

Research on start-ups was conducted as part of meetings organised in three technology parks in Poland: the Wrocław Technology Park (WTP), the University of Zielona Góra Science and Technology Park (UZSTP) and the Euro-Centrum Science and Technology Park in Katowice (ECSTPK). In addition, start-ups' expectations regarding the support offered by technology parks were identified. The research was carried out using the open space method (Harrison, 2008) on organised, moderated[2] panels attended by not only representatives from start-ups but also from the technology parks themselves, and from enterprises that are not start-ups, but which operate within the parks. The panellists could complete a voluntary questionnaire. In total, 28 start-ups took part in the panels.

To comply with the rules of open space method, our goal was to bring together a group of people who would be interested in finding answers to the questions asked (we did this in each technology park separately). Thus, the topics and key questions were sent to the panel participants beforehand. The meetings were moderated by leaders who kept to the same set of topics for discussion. The panels concerned four topics:

1. Which components of the business model are crucial for: (a) the company's development as measured by sales revenues, profit, market share, and (b) creating innovations (in terms of product, process, organisation, marketing)?

2. To what extent does network cooperation in the business environment influence either the creation of the business model or a change in it: (a) with business partners (suppliers or customers in your value chain), and (b) within the wider cooperation network — outside the chain values?

3. Where do the sources of innovation in the company come from? Does the fact that you operate in a park contribute to greater sources of innovation in your

[2] The moderators were members of the research team from the Wrocław University of Science and Technology: Piotr Kubiński, Edyta Ropuszyńska-Surma, and Magdalena Węglarz.

company? What kind of support do you expect for creating innovation or for generating sources of innovation (in terms of the park, cooperation network)?

4. Recently, the concept of open innovation and cooperation between large companies with a mature business model (e.g., Tauron, GE, LG, Siemens, Volvo etc.) with start-ups that are only just seeking their own business model has become increasingly important. Do you cooperate with big business? Can you offer something interesting to mature companies? Could large companies be interested in what you have to offer or can they help you develop?

The blueprint called the Business Model Canvas (BMC) (Osterwalder and Pigneur, 2010) was used during the panels. The choice of this description method was dictated by the fact that it is the most used and best-known descriptive model.

To ensure anonymity of the panel participants, codes were given to companies according to the industries in which they operated. If companies operated in several industries, the dominant one was used. However, if the representatives did not feel that one industry was dominant, two were selected. The start-ups in the study operated in the following industries: biotechnology (BIO), biotechnology and pharmaceutical (BPH), construction (CON), electronic (ELN), electricity (ELE), IT (INF), space (COS), medical (MED), industrial (IND) and telecommunications (TEL). Within a given industry, companies were assigned successive numbers in alphabetical order.

There were 5 start-ups related to biotechnology at the WTP. Two start-ups had links to the IT industry and two to the electronics industry. One start-up was involved in space technologies, one in the electricity industry, and one in construction.

At the UZSTP, participants were involved in the following industries: construction (2), electronics (1), electricity (1), space (1), industrial, but related to research, and production of innovative materials (3).[3]

The sectors represented at the ECSTPK were IT (3), medical, but also IT-based (1), telecommunications (1), and industrial (2).

Panel participants also came from enterprises and institutions (including clusters, technology parks) that were not start-ups. Their responses are not included in this article.

In addition, the panellists had the opportunity to complete voluntary anonymous questionnaires, which included questions regarding:

— the impact of network cooperation on the individual components of the BM,
— the benefits gained and expected from cooperation at the park,
— sources of innovation,
— types of entities the start-up has cooperated with in innovative activities,
— benefits gained by start-ups from the innovations introduced.

The questionnaire return rate was over 32%. The results cannot be generalised, but they enrich the panellists' remarks.

[3] The brackets indicate the number of start-ups in the panel representing each industry.

3. Results of the research

3.1. Key components in business models

The first question addressed to the panellists was two-fold. It concerned the key components of their business models that contributed to the company's development and those elements that were key to creating innovation.

Table 1 shows the key components of the business model for each start-up. No panellist indicated distribution channels. Therefore, this component of the business model was omitted from the compilation (Table 1). The labelling indicates which of the components affected the development of the company (a) and which affected the creation of innovation (b).

The key elements of the BM for the company's development, are the customer and value for the customer. Biotechnology and construction companies in particular suggested the creation of a bespoke offer tailored to the client's needs. They emphasised that customer value is important, not just turning a profit. The panellists, especially those in the construction industry, indicated that additional value for the client is advice on making savings and providing eco-friendly services. Panel participants at the WTP highlighted the important role of storytelling, which they perceive as a more effective way to gain customers and create value for them than classic marketing tools. They said the story should explain why their offer is important to the customer or the end user. Although the participants in the other panels made no direct reference to storytelling, they pointed to the important role of the client in adjusting the offer to the client's individual needs, making them aware of, for example, at what stage of the construction savings can be made. Relationships and direct contact with the client were an important part of the model. The active role of the client in creating innovation was highlighted. It would seem that customer relations should be particularly important for start-ups in the B2B market. However, construction entities that were in the process of changing their business model from B2B to B2C also emphasised the important role of the client (individual investor) in the design process.

Table 1. Key components of the business model for the development of a start-up (a) and for creating innovation (b)

Code	Value proposition	Customer relationships	Client segments	Key activities	Key resources	Key partners	Revenue streams	Cost structure
BIO1	a	b	b	a, b	a, b			
BIO2	a, b			b	a	a, b		+
BPH1	b			b				+
BPH2	a, b	a	a			a		
BPH3	a		a					

Code	Value proposition	Customer relationships	Client segments	Key activities	Key resources	Key partners	Revenue streams	Cost structure
CON1	a	a	a		a, b			
CON2	a	a		a	a, b			
CON3	b	a					b	
ELN1	a	a, b	a	b	a	a		
ELN2	a, b	a	b		a	a		
ELN3	a		a		a, b			
ELE1	+	a		a	a, b			
ELE2	a	a			a			
ELE3	a	a	a, b		a			
INF1				a	a		+	
INF2*			a		a			
INF3	a			a				
INF4				a	a			a
INF5	a	b			a			
COS1	a	a		b	a	a, b		
COS2			a	a	a	a, b	+	
MED1	a	a, b	a		a	a		
IND1	a	a			a			
IND2	b				a			
IND3	+	a, b			a	a		
IND4	a		+	a				
IND5	a			b	b	a	+	
TEL1					a	b		

Key: a — components of the business model indicated by the panel participants as important for the development of the company (start-up); b — components of the business model indicated by panel participants as important for creating innovation; — important components of the business model that were not directly indicated by the panellist, but their remarks prove that they play an important role; * — a panellist from a start-up did not answer all the questions but answered question 1

Source: own research based on the studies.

Delivering a unique product was the most frequent response to the question on the value delivered. There followed a clarification of what this uniqueness consists of. Answers worth quoting include: "saving money for the customer," "reducing losses for the customer," "personalised product/service," "comprehensive service," fitting into a market niche ("doing something that others cannot").

Another important part of the business model were key resources, which were mentioned as being the major basis for the start-up's development. Of 21 statements indicating resources as a key component of the BM, 13 responses were re-

lated to a broader or narrower understanding of human resources, e.g., staff skills, specialisation, knowledge, or know-how. Individual panellists mentioned the use of technology that is unique on a global scale, the existing infrastructure and the chance of access to it, or the need to have financial resources.

Thirteen panellists indicated that key activities are an important element of the BM. The panellists' comments in this regard were quite varied. It seems, although this should be confirmed on a larger research sample, that the nature of the key activities proposed depends on the type of business activity undertaken and the phase of the start-up's life cycle. The panellists mentioned "conducting R&D projects" (BIO), "training services" (BIO), customer education (INF), purchase of a ready-made module that saves time and money (BPH), a comprehensive service from design to maintenance (ELE), promotion (INF), relocation to another country due to a more convenient tax system (INF), expansion of business activity (diversification to related products) (COS), certification (COS, IND), participation in international projects (COS), introducing process innovations (IND), access to data (COS), carrying out activities to determine whether a product will be accepted onto the market (INF).

3.2. The impact of network cooperation on the creation of a business model

As part of the panels, entrepreneurs were asked to assess which elements of the BM are influenced by membership in a cooperation network. Participation in a cooperation network is understood as much broader than belonging to a technology park; companies can be associated formally or informally in various joint initiatives, clusters, associations, networks, chambers of commerce, etc. Since the cooperation network can affect the components of the value chain as well as ones that do not belong to this chain, this is reflected in the different colours in Figure 1. The components that belong to the value chain affected by the cooperation network are marked in yellow, and the components that do not belong to the value chain are marked in orange. 28 start-ups took part in the panels, but 24 companies answered this question.

According to panel participants, the network cooperation in which companies are involved affects the following components of the business model: (1) key company resources (this answer was mentioned by 62.5% of panellists), (2) key partners (54.2%), (3) value propositions (33.3%), (4) key activities (29.2%) and, to a lesser extent, the effect on customer relationships (12.5%) and customer segments (8.3%). None of the start-up representatives mentioned distribution channels and revenue streams as influenced by participation in the cooperation network.

However, if we look at network cooperation through the prism of the value chain, we can see some differences (see Figure 1). Thus, within the value chain (marked with yellow), the cooperation network mainly influences the value prop-

osition, key resources, and key partners. In addition to the value chain (orange), the cooperation network mainly affects key partners, key activities, customer relations, and customer segments.

In key resources, entrepreneurs highlighted the high impact of cooperation networks on:

— access to research infrastructure, laboratories, and equipment,
— opportunities to recruit staff,
— an increase in the owners' knowledge and experience,
— an increase in staff knowledge and skills.

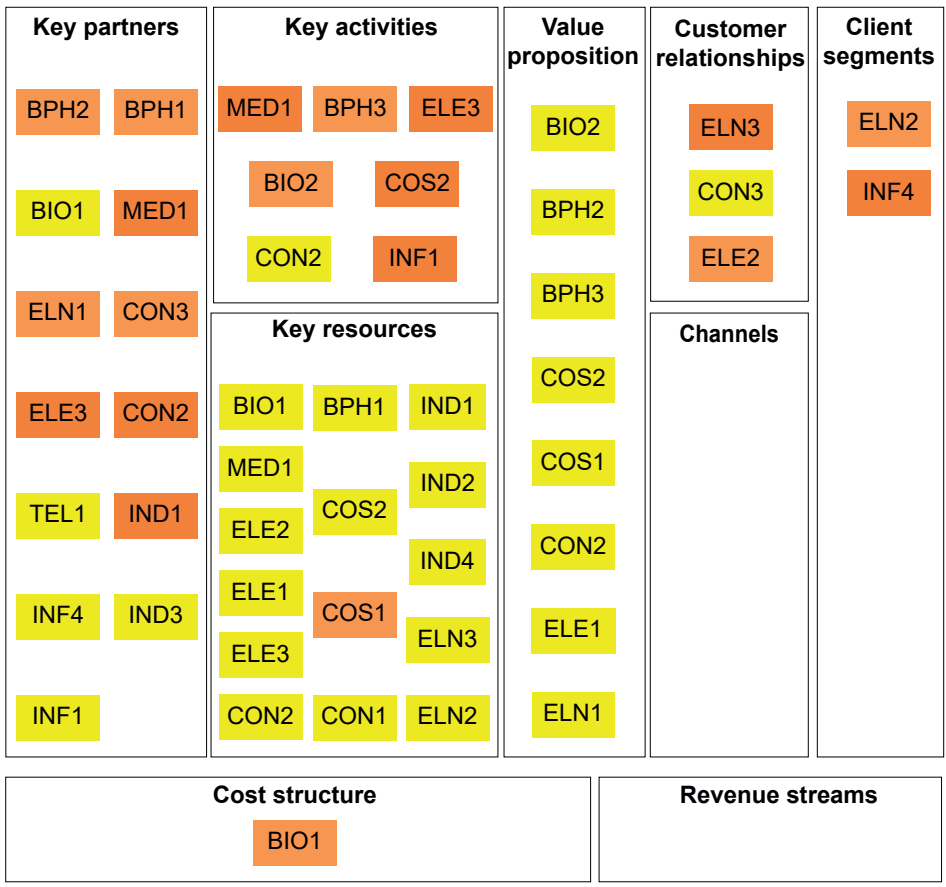


Figure 1. Diagram showing which components of the business model (BMC) are influenced by the cooperation network

Source: own research.

More than half of the panel participants noted the impact of the various networks in which they take part on cooperation with key partners, on acquiring new partners, and on establishing cooperation with universities. Their comments in-

cluded information on the activities of parks, which consisted in organising events that help in finding or acquiring partners, helping set up cooperation with a large partner, or assisting in the search for partners at the highest levels of government. One of the companies described a case where they changed their business model after going into an alliance with their partners and setting up a company consisting of previous clients. Another representative described a support group for exchanging knowledge between companies on orders and free resources, so that they could connect and support each other in projects for creating Polish products. They take advantage of the synergy effect because there are many companies in their market that could do the work but are lacking free resources, while other companies have free resources but have not won a contract. This approach is in line with Porter's concept of a cluster as a concentration of people working in the same industry. Despite the competitive aspect, their companies have access to staff, suppliers, and information. A representative from one of the parks said that they were trying to create industry cooperation networks, but companies were afraid of losing staff and customers. He remarked that they treated each other as competitors, that it was impossible to establish cooperation under these conditions, and that there was no "sharing" of staff. This comment could be the focus of extensive research as to why this effect occurred. Why is there cooperation in most Italian clusters, yet here a negative effect was observed? It seems that the cause of the synergy effect or the lack thereof are the conditions in which the network cooperation is established. Porter emphasised the ties between cluster participants. In the example cited, the creation of an industry cluster was "top-down," and it seems to have been assumed that the mere establishment of the cluster was enough for the synergy effect to occur. There is no such cause-and-effect relationship, as vividly described by Senor and Singer (2011, 173), when comparing clusters in Arab countries and in Israel: "[…] a simplistic view of clusters — one that maintains that a collection of institutions can be mechanically assembled and out will pop a Silicon Valley — is flawed."

A third of the participants highlighted the impact of cooperation networks in creating value propositions. They noted the fact that the network: (1) makes it possible to acquire knowledge and technological innovations, (2) teaches the "functioning" of communication, (3) makes it possible to cooperate, thanks to which they can develop a new value or service, (4) enables the creation of a synergy effect, as the result of which they create projects that are valuable for the Earth or for the environment.

Another important element influenced by the cooperation network are key activities. Since companies operate in different industries and have different BMs, the key activities also vary widely. Among the activities, the entrepreneurs mentioned participation in international projects, joint organisation of work by sharing resources, joint problem-solving, lobbying of partners at higher levels, and lobbying over legal regulations.

During the discussion, the entrepreneurs expressed what benefits they expected from the cooperation network. These were:

— cooperation, defined as entering into joint ventures with other businesses,
— reduction in costs (business activity),
— easier access to distribution channels,
— consultancy,
— marketing,
— protection from competitors,
— legal assistance,
— increase in knowledge of management,
— increase in communication skills,
— the possibility to make new contacts.

One of the interviewees shared his experience by pointing out that his business had already come up with many innovative solutions, but the condition for success was that the client understood the innovation. For this, you need a good relationship with the customer and the right marketing activities. Unfortunately, these are expensive and time-consuming for start-ups, and they lacked the ability to visualise and animate their suggested solutions. From this, it can be concluded that this type of professional service would be expected from a cooperation network.

When discussing cost reduction, the panellists expressed the need to acquire more and more customers.[4] Their research, along with the development of innovative technologies and products and services, require a considerable amount of work and funding. Gaining more customers through networking allows one to reduce unit costs, which in turn helps maintain a competitive advantage. The entrepreneurs also assessed the benefits they gained from cooperation in a park, cooperation network, or cluster — most businesses remarked that these included the chance to make new contacts and reduce costs. No business stated that it had achieved benefits related to easier access to distribution channels, consulting, marketing, protection against competitors, or widening management knowledge. These answers seem to be surprising, as the parks usually offer advisory assistance, including marketing, along with management or communication training, or give information on such events. Based on the observations of the panel participants, it is obvious that they have knowledge of both management and marketing activities as well as possess communication skills. Therefore, the following hypotheses can be formulated:

— This type of activity that goes on at parks is not at a sufficiently high level that would enrich the knowledge and skills of park participants.

[4] This effect should be distinguished from the typical networking effect, which determines the increase in value of a given good for its users with the growth of these users (e.g., Facebook). Here, we can observe a typical economies of scale effect, assuming very high inputs and, in the short term, fixed costs.

— Park participants do not believe that their knowledge in the above areas has been enriched by cooperation as part of the park.

3.3. Cooperation networks and collaboration with universities as a source of business model innovation

All the start-ups declared that they had created their own innovations, mainly in products and processes. As part of the voluntary questionnaire, in a multiple-choice question (up to three answers) on the sources of innovation in the business, the panellists chose "customers or suppliers or competitors" (nearly 78% of responses). However, comments made during the panel indicate that these were primarily customers. A smaller percentage stated that the source of innovation was managerial staff, staff in R&D departments and other staff. Almost 45% of the panellists stated that each of these three staff groups was a source of innovation. Cooperation with academic institutions as a source of innovation was mentioned by 33% of the respondents. Start-ups expected technical rather than intellectual support from universities. It is worth noting that participants on the panels included PhD students and academics who have set up spin-off companies. Some panellists explicitly stated that they had "emancipated" engineers who "create and carry out their own projects." Another panellist said he was seeing a relatively large outflow of staff from universities to industry.

Opinions on cooperation with universities varied. Red tape was the main barrier; some panellists pointed out that access to equipment and laboratories depended on the organisation of the academic year and the research work carried out by the staff at these institutions, and that they — start-ups — expected immediate access to highly specialised laboratory and research equipment. There were also comments indicating that universities in Poland differ in the quality of the services they provide regarding the promotion of inventions (this was from a long-term research worker at one of these universities). Hence, from their point of view, collaboration with research departments does not bring them the expected benefits. However, there were also comments that the process of signing an agreement with a university in Poland and, for example, the USA does not differ greatly. This comment provides a good example: "We should not demonise […] the forms of promotion and the non-commercialisation of various solutions in Poland, because a contract with an American university also runs six months." In turn, a biotechnology start-up participant noted that it is now much easier than just a few years ago to access specialised research equipment at universities, which allows experiments to be planned. The founder of one of the start-ups, who, as a researcher employed at a university, has carried out hundreds of projects with industry, spoke in a similar spirit. In his opinion, the procedure was simple: "There's a commission, there's money, and access to equipment is via goodwill." The problem was commissions for another faculty because a fee had to be paid for a given service.

Another interviewee commented on the university staff motivation system, which is not conducive to the commercialisation of research. Despite such varied statements during the panel discussion, the answers given in the questionnaire on cooperation on innovative activities over the last three years indicated that most respondents were discussing universities and/or departments at the Polish Academy of Sciences. Very few comments (1 or 2) concerned cooperation with suppliers, competitors and other entities from the same industry or consulting companies. In response to the closed question, no one mentioned that they cooperated in creating innovations with other businesses from their own group.

As part of the panel discussion, and at one of the parks, in a group session, the participants listed the most important tools and activities for supporting innovation through network cooperation. They suggested:

1. organising opportunities for making contacts with investors and assistance in attracting investors,
2. creating a base of passive and active investors and a database on access to infrastructures,
3. networking and creating an environment to support it, as well as organising regular meetings that will act as an information exchange channel,
4. organising business consulting support groups, including
5. communication,
6. X-PRIZE — the creation of a pre-filtered challenge delivery system,
7. establishing cooperation between universities and businesses,
8. "business sharing," "on demand" knowledge, mastermind groups,
9. hackathons,
10. an interdisciplinary R&D team based on human and equipment resources.

Action not aimed directly at already existing start-ups, but with an impact on innovation, was a proposal to teach young people how to work in groups.

Conclusions

This study enriches knowledge of start-ups' BMs and provides information on their expectations regarding cooperation networks and support provided by parks. It is the first study which made an attempt to identify the impact of network cooperation (in technology parks) on BM components in accordance with the canvas model and explain which components of the model are important for creating innovations by start-ups.

Muehlhausen (2018, 59) wrote that a great business model solves customers' problems in a creative way and generates profits far exceeding earlier assumptions. The research shows that the key element of BM for the development of a start-up is delivering often unique value for customers and relationships with customers who are included in the process of creating innovation. Fitting into

a market niche was mentioned by some panellists, which is in line with the research (Muehlhausen, 2018, 98–99). Another important element of the BM are resources, mainly human, including the skills and experience of staff, their knowledge and know-how. The panellists also mentioned the important role of key partners. The crucial role of actions as a significant element of the BM influencing the development of a start-up was mentioned much less frequently. The type of key activities proposed seems to depend on the type of business and the stage of the life cycle of the start-up, e.g., whether it is from the space or biotechnology industries. This conclusion requires further in-depth research.

The comments from panellists representing start-ups from the space, biotechnology, and IT industries show that they are organisations with a project structure. Carrying out and participating in projects affects the method of acquiring staff (associates), partners, and sources of financing. This structure justifies the expectations of start-ups regarding support in completing application forms.

All panellists saw the need for cooperation and many of them, apart from participating in technology parks, are members of other cooperation networks. 62% of the panellists declared that networking influenced their resources, which is in line with, e.g., the results of the research given in Centola (2013) or Milius (2008). Other elements of the BM that are influenced by networking are key partners, value proposition and key actions. These played a leading role in cooperation with customers. Former university employees spoke positively about working with universities, which is consistent with the findings of Stuart et al. (2007). They also pointed to the inconveniences and limitations of such cooperation (e.g., red tape at universities). Collaboration within the value chain most often affected the value proposition, and only then resources. The resources they mentioned were mainly access to human resources (staff), their knowledge and research infrastructure. The results of the research are in line with other studies (Bathelt, 2002). However, the panellists did not directly mention gaining access to sources of financing because of network cooperation, although this aspect seems to be important, which was visible in the responses to the surveys on the support from technology parks, which was obtained and expected.

Some pointed to the inconvenience of cooperation with a large enterprise and the perception of a start-up as a potential competitor. This observation is both consistent with the results of research (Baum et al., 2000) and does not confirm the results of research (Rothaermel, 2002; Steiber and Alänge, 2009) regarding the benefits for corporations deriving from cooperation with start-ups. Some panellists saw similar threats in participating in industry networks. This does not confirm the results of research that it is easier to cooperate in homogeneous networks (Petrucci, 2018). Thus, it seems that these comments indicate that the basic building block of cooperation is trust between network participants, which requires contact and is not created by an external entity. The theorem formulated in this way is in line with the concept of Frank J. van Rijnsoever (2020) that to establish

cooperation, it is not enough to organise meetings, but another stage is required, known as mating.

When start-ups create innovations, the most important aspects are customers and the cooperation with them, along with human resources and knowledge. Thus, in subsequent studies, areas of in-depth research should include open business models and the process of creating open innovations. In this context, a further prospect for research is to what extent technology parks fulfil the function of institutionalising open innovation.

The most important tools and activities for supporting innovation through network cooperation within parks, indicated by the panellists, can be grouped into:

— Assistance in establishing contacts and information on potential partners (universities, investors).

— Access to human and equipment resources or a database of available resources in other organisations, e.g., universities. This could be organised similarly to registration for, e.g., squash at sports clubs.

— Activating the consultancy, information exchange, access to knowledge, and sharing experience environments. Here, the desired forms of cooperation were networking and organising hackathons.

This qualitative research carried out using the open space method allowed us to obtain statements that do not always confirm the results of other authors' research. This provides the basis for in-depth research on a larger sample and formulating new research hypotheses.

References

Arwaj, A., Dziewit, W., Jagieło, M., Jedliński, K., Król, P., Pawlak, M., Snażyk, T. (2020). *Polskie startupy 2020. Covid Edition*. Warszawa: Startup Poland. Retrieved June 9, 2022 from https://startuppoland.org/wp-content/uploads/2021/03/Polskie-Startupy-2020-COVID-EDITION-PL_-www.pdf.

Bathelt, H. (2002). The re-emergence of a media industry cluster in Leipzig. *European Planning Studies*, 10(5), 583–611. DOI: 10.1080/09654310220145341.

Baum, J.A., Calabrese, T., Silverman, B.S. (2000). Don't go it alone: Alliance network composition and start-ups' performance in Canadian biotechnology. *Strategic Management Journal*, 21(3), 267–294.

Blank, S., Dorf, B. (2012). *The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company*. Pescadero, CA: K & S Ranch Inc.

Cap, J.P. (2018). Development of a methodology to develop venture capital strategies in applied R&D networks. In *Proceedings of the 13th European Conference on Innovation and Entrepreneurship* (166–176), 20–21.09.2018. Aveiro: University of Aveiro.

Centola, D.M. (2013). Homophily, networks, and critical mass: Solving the start-up problem in large group collective action. *Rationality and Society*, 25(1), 3–40. DOI: 10.1177/1043463112473734.

Chesbrough, H.W. (2007). Why companies should have open business models. *MIT Sloan Management Review*, 48(2).

Deloitte. (2016). *Diagnoza ekosystemu startupów w Polsce*. Retrieved June 9, 2022 from http://branden.biz/wp-content/uploads/2016/06/Deloitte_raport_startupy.pdf.

Dittrich, K., Duysters, G, de Man, A.-P. de. (2007). Strategic repositioning by means of aliance networks: The case of IBM. *Research* Policy, 36(10), 1496–1511.

Dodgson, M. (2015). Collaboration and innovation management. In M. Dodgson, D.M. Gann, N. Phillips (eds.), *The Oxford Handbook of Innovation Management* (462–481). Oxford: Oxford University Press.

Domańska, A. (2018). Cooperation between knowledge-based institutions and business: Empirical studies and network theories. *Forum Scientiae Oeconomia*, 6(4), 81–94. DOI: 10.23762/FSO_VOL6_NO4_6.

Fichter, K. (2012). Innovation communities: A new concept for new challenges. In *Innovation Communities Teamworking of Key Persons: A Success Factor in Radical Innovation* (1–15). Berlin: Springer. DOI: 10.1007/978-3-642-22128-6_1.

Galvão, A., Marques, C., Franco, M., Mascarenhas, C. (2019). The role of start-up incubators in cooperation networks from the perspective of resource dependence and interlocking directorates. *Management Decision*, 57(10), 2816–2836. DOI: 10.1108/MD-10-2017-0936.

Gloor, P., Dorsaz, P., Fuehres, H. (2011). Analyzing success of startup entrepreneurs by measuring their social network distance to a business networking hub. In *Proceedings of the 3rd International Conference on Collaborative Innovation Networks COINs 2011*, 8–10.09.2011. Basel: IEEE.

Hansen, M.T., Chesbrough, H.W., Nohria, N., Sull, D.N. (2000). Networked incubators: Hothouses of the new economy. *Harvard Business Review*, 78(5), 74–84.

Harrison, O. (2008). *Open Space Technology: A User's Guide*. San Francisco: Berrett-Koehler.

Kassen, M. (2018). Adopting and managing open data: Stakeholder perspectives, challenges and policy recommendations. *Aslib Journal of Information Management*, 70(5), 518–537. DOI: 10.1108/AJIM-11-2017-0250.

Kastelle, T., Steen, J. (2015). Networks of innovation. In M. Dodgson, D.M. Gann, N. Phillips (eds.), *The Oxford Handbook of Innovation Management* (102–120). Oxford: Oxford University Press.

Knop, L. (2013). Korupcja w klastrze — słownik podstawowych pojęć. In A. Karbownik (ed.), *Paradygmat sieciowy. Wyzwania dla teorii i praktyki zarządzania* (203–216). Gliwice: Wydawnictwo Politechniki Śląskiej.

Langley, D.J., Zirngiebl, M., Sbeih, J., Devoldere, B. (2017). Trajectories to reconcile sharing and commercialization in the maker movement. *Business Horizons*, 60(6), 783–794. DOI: 10.1016/j.bushor.2017.07.005.

Leite, T.Q., Silva, A.L., Silva, J.R., Silva, S.E. (2020). Science parks implementation framework proposal. In A. De Nisco (ed.), *15th European Conference on Innovation and Entrepreneurship (ECIE 2020)*, 17–18.09.2020, 495–503. Sonning Common: Academic Conferences and Publishing International. DOI: 10.34190/EIE.20.071.

Lopes, J., Farinha, L.M.C., Ferreira, J.J.M., Ferreira, F.A.F. (2018). Peeking beyond the wall: Analysing university technology transfer and commercialisation processes. *International Journal of Technology Management*, 78(1–2), 107–132. DOI: 10.1504/IJTM.2018.093936.

Massa, L., Tucci, C.L. (2015). Business model innovation. In M. Dodgson, D.M. Gann, N. Phillips (eds.), *The Oxford Handbook of Innovation Management* (420–441). Oxford: Oxford University Press.

McAdam, M., Marlow, S. (2007). Building futures or stealing secrets? Entrepreneurial cooperation and conflict within business incubators. *International Small Business Journal*, 25(4), 361–382. DOI: 10.1177/0266242607078563.

Milius, P.B. (2008). Ten years in the system of entrepreneurship stimulation. *Engineering Economics*, 4(59), 42–45.

Muehlhausen, J. (2018). *Modele biznesowe dla bystrzaków*. Gliwice: Helion.
Muent, H. (1999). University spin-offs and local business support infrastructure in a post-socialist economy. *Journal of Small Business and Enterprise Development*, 6(2), 128–138. DOI: 10.1108/EUM0000000006675.
Osterwalder, A., Pigneur, Y. (2010). *Business Model Generation*. Hoboken: NJ: Wiley & Sons.
Petrucci, F. (2018). The incubation process of mid-stage startup companies: A business network perspective. *IMP Journal*, 12(3), 544–566. DOI: 10.1108/IMP-07-2017-0043.
Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. New York: Crown Business.
Rijnsoever, F.J. van. (2020). Meeting, mating, and intermediating: How incubators can overcome weak network problems in entrepreneurial ecosystems. *Research Policy*, 49(1), 103884. DOI: 10.1016/j.respol.2019.103884.
Robehmed, N. (16.12.2013). The hottest startup of 2013. *Forbes*. Retrieved June 9, 2022 from https://www.forbes.com/sites/natalierobehmed/2013/12/16/the-hottest-global-startups-of-2013/.
Rothaermel, F.T. (2002). Technological discontinuities and interfirm cooperation: what determines a start-up's attractiveness as alliance partner? *IEEE Transactions on Engineering Management*, 49(4), 388–397.
Schutjens, V., Stam, E. (2003). The evolution and nature of young firm networks: A longitudinal perspective. *Small Business Economics*, 21(2), 115–134. DOI: 10.1023/A:1025093611364.
Scott, J. (2013). *Social Network Analysis*. Los Angeles: Sage.
Seet, P.-S., Jones, J., Oppelaar, L., Corral de Zubielqui, G. (2018). Beyond 'know-what' and 'know-how' to 'know-who': Enhancing human capital with social capital in an Australian start-up accelerator. *Asia Pacific Business Review*, 24(2), 233–260. DOI: 10.1080/13602381.2018.1431250.
Senor D., Singer, S. (2011), *Start-up Nation: The Story of Israel's Economic Miracle*. Toronto: McClelland & Stewart.
Shan, W., Walker, G., Kogut, B. (1994). Interfirm cooperation and startup innovation in the biotechnology industry. *Strategic Management Journal*, 15, 387–394, DOI: 10.1002/smj.4250150505.
Sheoran, M., Kumar, D. (2020). Role of environmental concerns on the startups networking: A study of Indian startups. *International Journal of Mathematical, Engineering and Management Sciences*, 5(6), 1300–1311, DOI: 10.33889/IJMEMS.2020.5.6.096.
Steiber, A., Alänge, S. (2021). Corporate-startup collaboration: Efects on large firms' business transformation. *European Journal of Innovation Management*, 24(2), 235–257, DOI: 10.1108/EJIM-10-2019-0312.
Stuart, T.E., Ozdemir, S.Z., Ding, W.W. (2007). Vertical alliance networks: The case of university-biotechnology-pharmaceutical alliance chains. *Research Policy*, 36(4), 477–498.

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.6

Michał Niewiadomski
ORCID: 0000-0002-3129-3331
Podhale State Vocational University in Nowy Targ
michal.niewiadomski@ppuz.edu.pl

Agata Niemczyk
ORCID: 0000-0002-5594-6296
Kraków University of Economics
agata.niemczyk@uek.krakow.pl

Paweł Zamora
ORCID: 0000-0001-8856-684X
Podhale State Vocational University in Nowy Targ
pawel.zamora@ppuz.edu.pl

Service turnover structures in selected Central European countries between 2015–2021: An analysis

Date of submission: 18.06.2022; **date of acceptance:** 14.09.2022

Keywords: high technology services, COVID-19, Central and Eastern Europe

JEL classification: F1, L8, N7, O14

Abstract

Services constitute an important part of the economy. From an economic development standpoint, one of the most meaningful groups is high technology services. This study diagnoses changes of turnover in services structure. The spatial scope covers Central and Eastern European countries, the time range — the years 2015–2021. The article is theoretical and analytical in nature. Research methods typical for this type of studies were used: critical literature of the subject analysis and investigation of published empirical secondary data conducted with decision tree method.

Introduction

Services constitute an important part of the economy, an element of economic policy, and a subject of research. Perceiving them through the prism of the service sector refers to the introduction of a three-sector division of the economy, defining each of them and indicating the factors determining the inter-sectoral shifts of workers (Ilnicki, 2009, 25). The sector in question operates under certain conditions that shape it. Between 2015–2021, what has particularly influenced the structure of service turnover — especially high-tech services — not only in Poland, but also in the world, was the COVID-19 pandemic. The evolution of high-tech services makes many barriers to running business disappear. New solutions enabling remote work and communication are still used in the post-pandemic period. Replacing the classic form of work with systems of remote solutions was proven to contribute to the elimination of non-production limitations of enterprise management, which is reflected through changes in socio-economic structures.

Transformations of structures are related with patterns of development — they are the result of economic changes and affect the dynamics of economic development. In the study, changes in the structure of turnover in services were diagnosed. The spatial scope covers the countries of Central and Eastern Europe, the time range — the years 2015–2021. The following research question was posed: is there any homogeneity or heterogeneity in the structure of turnover in services in the studied countries over the period of seven years? The considerations undertaken in the work are of theoretical and empirical nature; research methods common for this type of studies were applied: critical analysis of the literature on the subject and analysis of published empirical secondary data using the decision trees method.

The role of services in the economy

Services are currently the subject of research in many scientific disciplines — economics, sociology, geography, etc. The service sector is the largest in the economic world in terms of added value and is especially important in highly developed economies. It covers a wide range of tangible and intangible services (from office cleaning, through concerts, to surgery). In the economy, we can distinguish the so-called primary sector, including agricultural and mining activities, the secondary sector, which covers production and economic activities that facilitate the creation of material goods from raw materials provided by the primary sector. The service sector, although classified as the third in terms of hierarchy, accounts for the largest part of global economic activity.

Unfortunately, the term "service" is not precisely defined; it does not cover all types of services, and so, for example, the World Trade Organization (WTO) uses

a list or catalog of services which, together with statistics on service turnover developed by the International Monetary Fund (IMF), is the basis of many economic analyses (Szymańska, 2015, 15).

The concept of a service can be defined in various ways. In economic theory, it is described as an activity performed or an intangible product. In the economic cycle, services are treated as a commodity and it is assumed that there is a process of producing services in which a specific object is involved as a key. The object may be living or non-living. A living object is most often a human being, while a non-living one — a machine. There are various reasons why defining services poses problems. There is great variety among service activities. Every month, newer and newer services designed to satisfy various human needs are created. The current reality, made even more challenging by Covid, does not help either, especially when some services are accompanied by material goods, and vice versa. The difficulty in defining services results from their characteristics, i.e., their immateriality, heterogeneity, inseparability, and impermanence.

According to Statistics Poland (Główny Urząd Statystyczny, 2021b), services include all activities performed for the benefit of economic units conducting activities of a productive nature, i.e., services for the purposes of production that do not directly create new material goods and all activities provided for the benefit of national economy units and for the benefit of the population, intended for individual, collective, and the general public consumption. A service is also any activity one party can offer another; it is intangible and does not lead to any property. Its production may or may not be related to a physical product (Kotler and Keller, 2011, 426).

Services cover more than two-thirds of the GDP of highly developed countries. They constitute a dynamically developing sector of economies, based on the use of human capital and characterized by a high saturation with new technologies.

In the economies of medium and highly developed countries, one can notice an increase in the importance of the service sector and the growing role of knowledge manifested in the creation of technological and social innovations. Theoretical considerations on the change in the role of individual economic sectors in economic growth are focused on the reasons for the reallocation of resources between sectors such as agriculture, processing industry and services. There are two main factors determining the progress of countries through the various stages of development: the increase in real national income per capita and the pace of growth in labor productivity in individual sectors, including the service sector.

When analyzing the services sector, it becomes crucial to explain the structure of international trade in services, which includes: production-related services provided through the use of physical inputs that belong to other entities (goods for processing purposes), maintenance and repair services, transport services provided by EU residents to non-residents of EU or vice versa, including passenger, freight, and ancillary services such as cargo handling, packing and repacking,

towing not covered by freight services, pilotage and navigational assistance to carriers, air traffic control, emergency services, broker fees, etc.; journeys which essentially involve goods and services that EU-citizen travelers purchase from non-EU residents, or vice versa; and other services, which include construction, insurance and pensions, finances, fees for the use of intellectual property not elsewhere included, telecommunication, computer and information, and other business services (which include research and development services, consultancy services related with management, technical, and other services related to trade, individual, cultural, and recreational services, as well as public administration services not elsewhere included) (Eurostat Statistics Explained, 2017).

For the purpose of the study, the following types of services were used: information and communication, activities related to accommodation and catering services, wholesale and retail trade, repair of motor vehicles and motorcycles, transport and storage, activities in the field of administration services and support activities, professional and scientific activities, as well as technical.

Conditions for the operation of the services sector, with particular emphasis on the COVID-19 pandemic — an outline of the problem

While the conditions for the functioning of economic entities in 2015, and especially in 2019, were characterized by stability, this cannot be said for the years 2020 and 2021, when the "peace" in many industries was disturbed by the pandemic. It cannot be denied that any entity operating in the market would like to conduct its activities in an environment free from elements of risk. The unpredictable COVID-19 epidemic, considered in some scientific sources to be the black swan of the business cycle (Zelek, 2021, 16), caused disillusionment in this respect, triggering an economic recession. The fact that the pandemic had a global impact on the economy was reflected in three sectors of the economy. This includes the services sector, the global collapse of which was mainly caused by a significant decline in activity, trade, and investment stemming from restrictions, low demand, and lower energy prices (European Central Bank, 2021). These are only examples of the effects of a number of factors related to the pandemic that are the subject of this study.

When analyzing the data for this period, it is considered that in 2020, the real GDP of the eurozone decreased by 6.6% (European Central Bank, 2021), and the annual total inflation rate decreased to 0.3%, from 1.2% in 2019. In developed countries, inflation fell to the level of 0.7%, which means it was by 0.7 percentage points lower than in 2019 and by 1.3 percentage points lower than in 2018. However, in emerging market economies, inflation remained at the level of 5.1% from

the previous year. For emerging Asian economies, inflation slightly decreased by 0.2 percentage points, to 3.1% (Główny Urząd Statystyczny, 2021a, 47). There was a decline in the growth rate of the volume of global trade in goods in 2020, which was negative and amounted to -5.4% (both export and import decreased by 5.4%), thus it was lower than the year before, when the value was at 5.1%.

For the countries of Central and Eastern Europe discussed here, inflation fell by 0.8 percentage points to the level of 5.4% (Statistics Poland, 2021a, 47). In individual countries in this region, the decline in GDP in 2020 amounted to (Gołębiowska, 2021, 1):

a) over 8% in Croatia — this is the third worst result in the entire European Union, a higher level of recession was recorded only in Spain and Italy,

b) ca. 5–6% in Hungary, Slovakia, Slovenia, and the Czech Republic,

c) ca. 4% in Romania and Bulgaria,

d) ca. 3% in Poland, Estonia, and Latvia,

e) less than 1% in Lithuania — this is the second best result in the entire European Union, after Ireland, which was the only member state to record economic growth.

These changes were accompanied by the changes in unemployment rate. In almost all Central and Eastern European countries — except Poland — the unemployment rate increased compared to the previous year. In individual countries, it amounted to:

a) ca. 8% in Croatia, Latvia, and Lithuania,

b) ca. 7% in Slovakia and Estonia,

c) ca. 4–5% in Bulgaria, Romania, Slovenia, and Hungary,

d) ca. 3% in Poland and the Czech Republic.

Not all industries have been equally restricted. The sectors most affected are wholesale and retail, accommodation and food services, transport and hospitality, and other sectors in which women tend to be over-represented (European Central Bank, 2021).

Another consequence of the COVID-19 pandemic in 2020 was the decline in the value of foreign direct investment (FDI) in the world. This value amounted to USD 998.9 billion, thus, it decreased by USD 531.3 billion (a decrease by 34.7% compared to the previous year). Foreign direct investments in developed countries in 2020 accounted for 31.3% of the global FDI inflow, and compared to 2019, they decreased by USD 436.8 billion (58.3%).

The socio-economic development of states depends on many elements such as political, economic and cultural factors, access to natural resources or communication routes. In addition, the development of new technologies results in: reduction of transport costs, increase in production processes' efficiency, introduction of modern services as well as increased access to education. Consequently, the economies of countries adopt different development patterns, which is reflected in the changes in their socio-economic structures.

The study examines the development patterns of Central European EU countries in the structure of trade in services between 2015–2021. For this purpose, the method of classification and regression trees was used.

Research methodology

The main advantage of the method used (classification and regression trees) is its direct interpretability — clear methodology of building regression trees. More importantly — this procedure allows for analysis based on quantitative and qualitative variables (Dudek, 2014, 108).

The regression tree is created by repeatedly performing the following steps on each node: finding the split point for each predictor, finding the best node split criterion, splitting a node using the best split found in the previous step (if the rules to stop splitting are not met).

The best split maximizes the split criterion $\Delta i\,(s, t)$. When the dependent variable Y is continuous, the split criterion constitutes the least squares deviation:

$$i(t)=\frac{\Sigma_{n\in q(t)} w_n f_n (y_n-\bar{y}(t))^2}{\Sigma_{n\in q(t)} w_n f_n} \qquad (1)$$

where

$$\bar{y}(t)=\frac{\Sigma_{n\in q(t)} w_n f_n y_n}{N_w(t)} \qquad (2)$$

Y — dependent variable
X — set of predictive variables
q (t) — training samples located in node t
w_n — case weight related to case n
f_n — frequency weight related to case n
s — split
t — node
s* — the best split

Tree development ends when at least one of the stopping rules is applied:

a) all cases in the node have identical values of the dependent variable;

b) all cases in the node have identical values for each predictor;

c) the tree depth reaches the maximum depth limit (imposed by the researcher);

d) as a result of node fragmentation, a slave node will be created, the size of which is smaller than its minimum size;

e) for the best split s* of the node t, the split determinant $\Delta I\,(s^*, t) = p(t)\Delta i(s^*,t)$ is smaller than the minimum criterion defined by the researcher.

The size of regression trees can be reduced by comparing the redistribution cost coefficients with the error coefficient computed on the test set using multiple

cross-validation (Bal-Domańska, 2012, 513). The decision tree for the purposes of the study was made using the Statistica software. For the structure of turnover in the services sector, the dependent variable constituted the dynamics of the gross value added of services in relation to 2014.

Regression tree for the structure of turnover in the service sector — research results

The data used for the study is sourced from the Eurostat database. On the basis of the obtained records, the structure of turnover in services was created, which consisted of the following variables: wholesale and retail trade, repair of motor vehicles and motorcycles; transportation and storage; activities related to accommodation and catering services; information and communication; professional, scientific and technical activities; activities in the field of administration services and supporting activities. The objects were divided into nodes using the regression trees method (Figure 1).

In order to simplify the presentation of the results, symbols (from U1 to U6) were assigned to the names of the variables, which were used to present the test results.

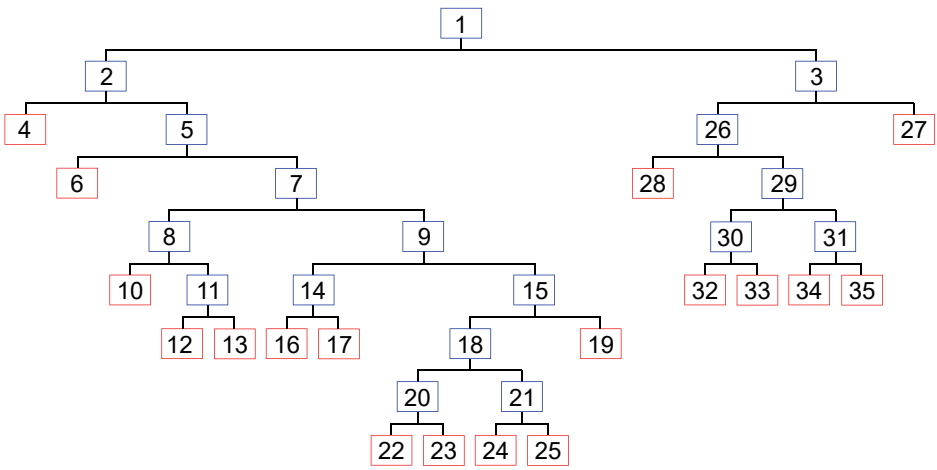


Figure 1. Regression tree for the structure of turnover in services in Central European countries of the European Union

Rectangles indicate the nodes and the numbers assigned to them. End nodes are marked in red.

Source: Own study based on EUROSTAT in 2021 in the Statistica program.

The graphic division of the obtained tree in numerical terms is presented in Table 1.

Table 1. Construction of a regression tree for the structure of turnover in services in Central European countries of the European Union

Node number	Left branch (number)	Right branch (number)	Node size	Average pace of gross value added of the service sector for the node	Variance of pace of gross value added of the service sector for the node	Splitting variable	Split point
1	2	3	77	0.268921	0.032922	U4*	0.072950
2	4	5	48	0.214440	0.017768	U3*	0.015650
3	26	27	29	0.359097	0.044960	U1*	0.683950
4			4	0.415275	0.004975		
5	6	7	44	0.196182	0.014930	U3*	0.017350
6			4	0.080050	0.005440		
7	8	9	40	0.207795	0.014396	U4*	0.059700
8	10	11	12	0.149133	0.010454	U1*	0.661200
9	14	15	28	0.232936	0.013978	U5*	0.051650
10			2	0.332400	0.002304		
11	12	13	10	0.112480	0.004024	U6*	0.031750
12			3	0.055900	0.000235		
13			7	0.136729	0.003687		
14	16	17	8	0.321188	0.013411	U4*	0.064750
15	18	19	20	0.197635	0.009844	U2*	0.115100
16			4	0.226575	0.005984		
17			4	0.415800	0.002935		
18	20	21	17	0.177576	0.008440	U6*	0.038300
19			3	0.311300	0.002598		
20	22	23	8	0.127163	0.004005	U1*	0.659150
21	24	25	9	0.222389	0.008115	U3*	0.019850
22			4	0.084525	0.001816		
23			4	0.169800	0.002557		
24			2	0.328800	0.000151		
25			7	0.191986	0.006231		
26	28	29	22	0.273223	0.025650	U3*	0.020450
27			7	0.628986	0.009633		
28			4	0.443950	0.013772		
29	30	31	18	0.235283	0.020373	U5*	0.081800
30	32	33	9	0.158144	0.007475	U5*	0.068150
31	34	35	9	0.312422	0.021371	U5*	0.100950
32			3	0.250900	0.001443		

Node number	Left branch (number)	Right branch (number)	Node size	Average pace of gross value added of the service sector for the node	Variance of pace of gross value added of the service sector for the node	Splitting variable	Split point
33			6	0.111767	0.004037		
34			6	0.400867	0.004648		
35			3	0.135533	0.007881		

*U1 — Wholesale and retail trade, repair of motor vehicles and motorcycles
*U2 — Transport and storage; *U3 — Accommodation and food service activities
*U4 — Information and communication; *U5 — Professional, scientific and technical activities
*U6 — Business administration and support activities

Source: Own study based on EUROSTAT in 2021 in the Statistica program.

The fourth node containing 4 observations was distinguished on the basis of the U4 variable constituting less than 7.29%. Additionally, the value of the U3 component was less than 1.56%.

Four observations belonged to node 6. It was characterized by similar parameters to the fourth group. The U4 component was lower than 7.29%, and the U3 variable was below 1.73%.

Node 10 consisted of 2 observations. Variable U1 was below 66.12% in the structure of trade in services, and U4 was below 7.29%. At the same time, the U3 component was higher than 1.73%.

Node 12 was made up of 3 observations for which the value of the U6 variable in the structure was below 3.17%, while the U1 component was above 66.12%.

Node 13 (7 observations) was composed of objects in which the value of the U6 variable was higher than 3.17%, and the value of the U1 component was over 66.12%. At the same time, the average value of the U4 variable was lower than 5.97%, and U3 was higher than 1.73%.

In nodes 16 (4 objects) and 17 (4 objects), the U4 component was above 5.97% but was not higher than 7.29%, while the U5 variable accounted for less than 5.16%. Additionally, these nodes were characterized by a higher value of the U3 component than 1.73%.

Node 19, which consisted of 3 observations, was characterized by the share of the U2 variable constituting on average above 11.51% and the U5 component exceeding 5.16%. At the same time, the variable U3 was higher than 1.73%, and the U4 component constituted over 5.97% but not more than 7.29%.

Node 22 (4 observations) was characterized by the U1 component value above 65.91%. The U6 variable was below 3.83%, at the same time the U2 variable was lower than 11.51%, and the share of U5 was higher than 5.16% in this node. At the same time, the U4 component accounted for over 5.97% but not more than 7.29%.

For node 23 composed of 4 objects, the share of the U1 variable was higher than 65.59%, while the U4 component was above 5.97%, but not more than 7.29%. Moreover, the variable U6 was less than 3.83% and the variable U2 was less than 11.51% at this node.

Nodes 24 (2 observations) and 25 (7 observations) had similar characteristics. The U3 component was higher than 1.73%, while the U2 variable was below 11.51%. Additionally, in nodes 24 and 25 the share of U4 was over 5.97%, but not more than 7.29%, while the U6 component was higher than 3.83%.

The highest mean value of the U1 variable was characteristic for node 27 (7 observations). The U4 component was above 7.29% in this node.

Node 28 (4 observations) had a lower value of the U1 variable than 68.39%. At the same time, the average value of the U3 component was below 2.04%, and the share of U4 was higher than 7.29.

Nodes 32 (3 observations) and 33 (6 observations) were characterized by similar mean values of the components. The U5 component for them was lower than 8.18%. Moreover, the variable U3 was over 2.04%, and U4 was over 7.29%.

In nodes 34 (6 observations) and 35 (3 observations), it was noted that the U5 component was higher than 8.18%. At the same time, the variable U3 accounted for over 2.04% and U4 was over 7.29%.

As a result of the division in the set of observations, 18 terminal nodes presented in Table 2 were obtained.

Table 2. Characteristics of variables in terminal nodes separated for the structure of turnover in services according to the rate of gross value added of services

Node number	Average values of the components of the structure of turnover in services (percentage values)					
	U1*	U2*	U3*	U4*	U5*	U6*
4	69.40	15.29	1.42	5.60	5.15	3.15
6	71.60	12.13	1.67	5.80	5.43	3.38
10	65.21	19.38	1.98	4.76	4.52	4.18
12	72.60	12.78	2.29	5.28	4.18	2.87
13	68.92	15.20	2.21	5.25	4.53	3.90
16	71.76	11.65	2.70	6.19	4.35	3.36
17	71.70	10.57	2.81	6.81	4.68	3.43
19	65.78	11.58	3.19	6.77	9.85	2.84
22	65.53	10.74	4.72	6.88	8.70	3.44
23	70.27	10.51	2.61	6.67	6.40	3.55
24	65.68	10.12	1.77	6.89	9.03	6.52
25	65.94	10.37	2.46	6.94	8.87	5.42
27	71.43	9.83	2.41	7.53	5.48	3.31
28	65.74	11.02	1.87	8.38	8.00	5.00

Node number	Average values of the components of the structure of turnover in services (percentage values)					
	U1*	U2*	U3*	U4*	U5*	U6*
32	65.24	8.87	7.21	8.40	6.48	3.80
33	64.52	10.55	4.64	7.90	7.59	4.82
34	64.30	10.57	2.81	7.91	8.57	5.84
35	61.74	10.29	2.21	7.60	11.46	6.70

*U1 — Wholesale and retail trade, repair of motor vehicles and motorcycles
*U2 — Transport and storage; *U3 — Accommodation and food service activities
*U4 — Information and communication; *U5 — Professional, scientific and technical activities
*U6 — Business administration and support activities

Source: Own study based on EUROSTAT in 2021 in the Statistica program.

Node separation allowed for the creation of more complex groups — classes (Table 2). The first class was built on data from nodes 27, 28, 32, and 3. Its main feature was share of the U4 component, which accounted more than 7.29 (nodes constituting Class I are marked in orange in Table 2).

The second class was also created, to which nodes 34 and 35 were assigned. The variable U5 share in this class was higher than 8.18 (nodes constituting Class II are marked in blue in Table 2).

A third class was formed and included nodes 4, 6, 10, 12, 13, 16, 17, 19, 22, 23, 24, and 25. Their observation did not show typical directions of change (nodes constituting Class III are marked in gray). In Class III, it is possible to identify nodes 19, 22, 24, and 25, where the average of the U5 variable was higher than 8.18 (values marked in yellow in Table 2).

Node 19 included observations of the structure of Slovenia in 2019–2021. In the specified years, the country did not manifest changes in structure towards a significantly higher or lower U5 variable share in the structure of services turnover. This was also true for the other variables — the country showed stability in structure in 2019–2021. In addition, this node was extracted on U2 variable basis. Therefore, it was assigned to Class III.

A similar situation occurred in node 22, which included structure observations for Slovenia in 2015–2017 and Croatia in 2016. In this node, structure of turnover in Slovenia's services did not change significantly — so the country was assigned to Class III. Croatia's economy, on the other hand, experienced changes because it moved to a node where the average share of the U4 variable was lower than 7.29. The country changed its class affiliation — in 2016, it moved from Class I to Class III. Additionally, node 22 was extracted based on the U1 variable.

Node 25 included the Czech Republic from 2015 to 2017, and during this period it did not show significant changes in the structure of services turnover. Despite the fairly high average variable U5 value (about 8.87), no significant changes were observed in its value in structure of turnover in services in the Czech

economy. A similar situation applied to Slovakia (in 2017–2018) and Poland (in 2018–2019). They belonged to node 25, and in the years under study, they did not manifest typical changes in the structure of turnover in services. It should be noted that node 25 was extracted based on variable U3.

Node 24 included 2 observations — Poland in 2020 and Slovakia in 2021. Poland throughout most of the studied period was characterized by similar average component values of turnover in services structure — that is why it was assigned to Class III (it did not manifest characteristic directions of changes in the variables). In Slovakia, the value of the U4 component fell by about 1.2 in 2021. It moved to Class III from Class I.

The variables that have been used as the characteristics of the first and second classes include services which encompass the broadly understood development of modern technologies. The component of information and communication includes, i.a., hardware, software, and technical means used for the purpose of communication (Eurostat Statistics Explained, 2016). On the other hand, the variable of professional, scientific, and technical activities concerns mainly sectors in which work requires high qualifications. These include, i.a., technical studies and analysis, scientific research and development, as well as professional services (Eurostat Statistics Explained, 2022).

The component of professional, scientific, and technical activity had the greatest impact on the rate of changes in the gross value added of services. The variable of wholesale and retail trade had a large predictive property, alongside repair of motor vehicles and motorcycles. The variables with a lower rank for changes in the rate of gross value added were: activities related to accommodation and catering services, information, as well as information and communication (Table 3).

Table 3. Significance of discriminant variables at the stage of creating a regression tree for the structure of turnover in the service sectors in Central European countries of the European Union

Variable	Significance
U5 — Professional, scientific and technical activity	100
U1 — Wholesale and retail trade; repair of motor vehicles and motorcycles	94
U3 — Activities related to accommodation and food service	76
U4 — Information and communication	71
U6 — Business administration and support activities	70
U2 — Transport and storage	58

Source: Own study based on EUROSTAT 2021 data in the Statistica program.

The analysis of the obtained regression tree showed that some countries (Bulgaria, the Czech Republic, Estonia, and Romania) migrated to classes characterized by higher values of the U5 and U4 variables (Table 4) in the last periods of the study. This proved the transformations taking place in the structures of service turnover in the analyzed economies.

Structural changes in turnovers of services aimed at increasing the share of variables relating to high-tech sectors were not observed in all of the countries studied. The structures in countries such as Latvia, Lithuania, Poland, and Slovenia did not show any significant changes in the components of the structure, including information and communication as well as professional, scientific, and technical activities. Additionally, the study showed that the Hungarian economy has transformed — an increase in the component of professional, scientific and technical activity was observed in the structure of turnover in services. In contrast, the Czech Republic migrated to a class with a higher share of the information and communication variable in the last years of the study.

The structure of turnover in services in Croatia did not show any significant changes compared to other analyzed economies. This country was characterized by relatively high average values of the information and communication component in 2015 and from 2017 to 2021.

Moreover, numerous migrations of Slovakia between the designated classes were observed. This means that the Slovak economy underwent transformations which were difficult to interpret.

Table 4. Variability of selected countries over time on the basis of classes distinguished using the regression trees method for the structure of turnover in services

Year / State	2015	2016	2017	2018	2019	2020	2021
Bulgaria	III	III	III	III	III	I	I
The Czech Republic	III	III	III	II	II	I	I
Estonia	III	III	III	III	III	I	I
Croatia	I	III	I	I	I	I	I
Latvia	III	III	III	III	III	III	III
Lithuania	III	III	III	III	III	III	III
Hungary	I	I	I	II	II	II	II
Poland	III	III	III	III	III	III	III
Romania	III	III	III	I	I	I	I
Slovenia	III	III	III	III	III	III	III
Slovakia	II	II	III	III	II	I	III

Signs I, II or III denote distinguished classes belonging to the country's observations for the year.

Source: Own study based on the research results.

Discussion

The conclusions that can be drawn from the research on the service sector of the post-pandemic market in Central and Eastern Europe constitute an important point in the discussion. There is a clear division of countries into those which have been hit hard by the crisis and are economically weaker (Southern and Eastern

Europe), and those which can easily afford the costs of the crisis due to the unequal flow of capital within the single market , as their safe haven status allows them to draw in funds from other EU and euro area countries (Northern and Western Europe) (Picek, 2020, 325–331). By following the effects of the COVID-19 pandemic, processes of economic renewal are noticed, among which the restructuring of economic sectors is a necessary, expected, and naturally appropriate, important point. As presented by Mączyńska and Pysz (2021, 233), the reorganization of the sectors will be aimed at not only sustainable development, diversification of production, changes in the consumer goods sector, digital labor market, but above all the digital economy (Table 5).

Table 5. Stages of the impact of a pandemic on the economy

Administrative limitations →	Staged restrictions removal →	Rebuilding the economy →	Business continuity — reorganization
1–3 months	3–6 months	12–24 months	—
freezing the economy	gradually eliminating restrictive bans	recovering from economic losses	the new economic reality
focusing efforts on pandemic reduction	opening/starting previously closed businesses	structural reforms	digital economy
mobility restriction, social distance, quarantine	low tendency to invest and consume	sectoral restructuration	sustainable development
restriction of business activities decline in population income and reduction in consumption	increasing health care spending	public investments	changing consumption/food habits — increasing demand for organic food
			increasing the role of remote work
			limitation on business travel
			limitation on business travel
Government support and stimulatory packages → → → fiscal, monetary, health policy → → →			

The arrows in the column headings indicate the transition from one stage to another.

These stages are accompanied by government support in the form of aid and stimulus packages regarding fiscal, proper or systemic policy. Therefore, arrows have been added to the last row of the table to represent the process during each of the four stages (from *Administrative Restriction* to *Business Continuity — Reorganization*).

Source: Mączyńska and Pysz, 2021, 233.

It is worth emphasizing that the conclusions from the analysis of the structure of turnover in services in Central European EU countries in 2015–2021, from the economic growth of the discussed areas stopped by the COVID-19 pandemic (but also the current war in Ukraine), can be used to shape the policy of reconstruction and restructuring of the post-pandemic realty. Such solutions should include intensive recovery programs, such as government plans to stimulate the economy, reconstruction plans, Recovery and Resilience Facility, Council country-specific recommendations, the Digital Compass (target of the EU for all populated areas to have 5G coverage by 2030). Changes in the structure of sectors and diversification of production are clearly visible today as a direction of change, as countries that had less diversified economies — e.g., those dependent on tourism — suffered the most (Carraro et al., 2022, 106).

Another important issue raised in the article is the level of development of the high-tech sectors in the discussed countries. The transformations taking place in this sector, initiated before the pandemic, accelerated dynamically as a result of global lockdowns. The research methodology includes such measures as: Frontier Technology Index ("gig economy"), index of digital economy and digital society, or a 'readiness index' (comprising five building blocks: ICT deployment, skills, R&D activity, industry activity, and access to finance). According to the research published by the UN (United Nations Conference on Trade and Development, 2021, 137) presented in Table 6, three of the countries discussed in this article are in the upper-middle value range, i.e. Romania, Bulgaria, and Croatia, while all the others belong to highly developed countries in this area. They rank low compared to the European Union, but are in the lead when compared to the world's economies (158 participating in the study), which are also numerously represented in the lower-middle and low categories.

Table 6. Results of the readiness for frontier technologies index (index score ranking — scale of 0 to 1)

Country name	Total score	Total ranking	Score group	ICT ranking	Skills ranking	R&D ranking	Industry ranking	Finance ranking
United States of America	1.00	1	high	14	17	2	20	2
Switzerland	0.97	2	high	7	13	13	3	3
United Kingdom	0.96	3	high	17	12	6	11	14
Sweden	0.96	4	high	1	7	16	15	16
Singapore	0.95	5	high	4	9	18	4	18
Netherlands	0.95	6	high	6	10	15	8	23
Republic of Korea	0.93	7	high	19	27	3	9	8

Country name	Total score	Total ranking	Score group	ICT ranking	Skills ranking	R&D ranking	Industry ranking	Finance ranking
Ireland	0.92	8	high	24	6	21	1	87
Germany	0.92	9	high	23	16	5	10	39
Denmark	0.92	10	high	2	4	25	21	5
Czechia	0.75	26	high	30	23	32	18	72
Poland	0.73	28	high	32	30	30	32	70
Estonia	0.72	29	high	15	20	59	31	61
Slovenia	0.69	33	high	28	15	62	29	84
Slovakia	0.69	36	high	21	47	44	23	59
Hungary	0.67	37	high	27	43	48	16	99
Lithuania	0.65	39	high	25	24	54	48	88
Latvia	0.65	40	high	20	29	75	37	92
Romania	0.60	45	upper-middle	44	70	34	38	115
Bulgaria	0.57	51	upper-middle	53	48	65	41	73
Croatia [the last UE country]	0.56	52	upper-middle	46	39	76	47	66
Albania [the last European country]	0.38	85	lower-middle	59	78	105	106	98
Dem. Rep. of the Congo [the last position]	0.00	158	low	154	138	153	125	155

Source: United Nations Conference on Trade and Development, 2021, 137.

Moreover, for the EU's Digital Economy and Society Index (European Commission, 2021), Europe's starting point for these changes is heterogeneity in the digital economy. In terms of services, the digital integration of technology (business digitization, e-commerce, AI, cloud services) and digital public services (eGovernment) (Carraro et al., 2022, 95) are taken into account. The discussed countries of Central and Eastern Europe are among the least developed in terms of this type of services (European Commission, 2021, 19).

During the discussed period, Poland recorded a regression in the scope of the analyzed group of services. Taking into account the losses caused by the pandemic in the euro area, countries such as Latvia, Slovenia and Slovakia (but also Estonia, Greece, Italy, Cyprus, Portugal) spent a relatively large part of their EU aid funds (RRF) on projects in the area of socio-economic resilience. By contrast, "Belgium, Germany, Ireland, Luxembourg, Malta, Austria and Finland have invested significantly more in green and/or digital transition" (Bańkowski et al., 2022, 17).

The technological gap will therefore widen, which will be reflected in the structure of the service sector (Carraro et al., 2022, 98).

Conclusions

On the basis of the obtained research results, the most favorable assessment of the structure of turnover in the service sector can be attributed to the following countries: Bulgaria, the Czech Republic, Estonia, and Romania. They have proven to belong to classes characterized by higher value in the components: information and communication, professional, scientific, and technical activity in the structure of turnover in services.

In countries such as Latvia, Lithuania, Poland, Slovenia, and Slovakia, undirected structural changes in the turnover of services have taken place. This fact can be attributed to the stagnation of their economies in terms of the development of high-tech services.

It was also concluded that wholesale and retail trade as well as repair of motor vehicles and motorcycles were still an important element of the service sector in the Central European countries of the EU, which was visible in the construction of the regression tree for turnover in services.

The obtained research results confirmed the high heterogeneity of the economies of the analyzed countries in terms of the level and pace of development of high-tech services, and thus in the structure of turnover in services. This made it possible to achieve the goal of the study, proving the complexity of the structure of turnover in services in the analyzed countries.

References

Bal-Domańska, B. (2012). Klasyfikacja podregionów Polski szczebla NUTS-3 ze względu na poziom rozwoju gospodarczego. *Problemy rozwoju regionalnego*, (244), 513.

Bańkowski, K., Bouabdallah, O., Domingues Semeano, J., Dorrucci, E., Freier, M., Jacquinot, P., Modery, W., Rodríguez-Vives, M., Valenta, V., Zorell, N. (2022). *The Economic Impact of Next Generation EU: A Euro Area Perspective*. Frankfurt am Main: European Central Bank.

Carraro, C., Coeuré, B., Dhand, O., Eichengreen, B., Mills, M., Rey, H., Sapir, A., Schwarzer, D. (2022). *A New Era for Europe: How the European Union Can Make the Most of its Pandemic Recovery, Pursue Sustainable Growth, and Promote Global Stability*. Luxembourg: Publications Office of the European Union. DOI: 10.2765/11297.

Dudek, G. (2014). Prognozowanie krótkoterminowe obciążeń systemów elektroenergetycznych z wykorzystaniem rozmytych drzew regresyjnych. *Przegląd Elektrotechniczny*, 90(4). DOI: 10.12915/pe.2014.04.24.

European Central Bank. (2021). *Raport Roczny EBC 2020*. Retrieved May 11, 2022 from https://www.ecb.europa.eu/pub/annual/html/ar2020~4960fb81ae.pl.html.

European Commission. (2021). *The Digital Economy and Society Index (DESI) 2021*. Retrieved May 28, 2022 from https://ec.europa.eu/newsroom/dae/redirection/document/80563.

Eurostat Statistics Explained. (2016). *Glossary: Information and Communication Technology (ICT)*. Retrieved May 22, 2022 from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Information_and_communication_technology_(ICT).

Eurostat Statistics Explained. (2017). *Statystyka bilansu płatniczego*. Retrieved May 10, 2022 from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Statystyka_bilansu_pC582atniczego&oldid=338611.

Eurostat Statistics Explained. (2022). *Professional, Scientific and Technical Activity Statistics — NACE Rev. 2*. Retrieved May 22, 2022 from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Professional,_scientific_and_technical_activity_statistics_-_NACE_Rev._2#Structural_profile.

Główny Urząd Statystyczny. (2021a). *Macroeconomic Situation in Poland in the Context of the World Economic Processes in 2020*. Warszawa: Główny Urząd Statystyczny.

Główny Urząd Statystyczny. (2021b). *Statistical Yearbook of the Republic of Poland*. Warszawa: Główny Urząd Statystyczny.

Gołębiowska, M. (2021). Gospodarki Europy Środkowej: różne oblicza pandemii COVID-19. *Komentarze IEŚ*, 383(80). Retrieved May 22, 2022 from https://ies.lublin.pl/komentarze/gospodarki-europy-srodkowej-rozne-oblicza-pandemii-covid-19/.

Ilnicki, D. (2009). *Przestrzenne zróżnicowanie poziomu rozwoju usług w Polsce. Teoretyczne i praktyczne uwarunkowania badań*. Wrocław: Instytut Geografii i Rozwoju Regionalnego Uniwersytetu Wrocławskiego.

Kotler, P., Keller, K.L. (2011). *Marketing Management*. Harlow: Pearson Education.

Mączyńska, E., Pysz, P. (eds.). (2021). *Społeczna Gospodarka Rynkowa w dobie pandemii i postpandemii*. Warszawa: Polskie Towarzystwo Ekonomiczne, Fundacja Konrada Adenauera.

Picek, O. (2020). Spillover effects from Next Generation EU. *Intereconomics*, 55(5), 325–331. DOI: 10.1007/s10272-020-0923-z.

Szymańska, E. (2015). Development of service sector as origin of economic transformation. *Optimum. Studia Ekonomiczne*, 73(1), 97–109. DOI: 10.15290/ose.2015.01.73.09.

United Nations Conference on Trade and Development. (2021). *Technology and Innovation Report 2021: Catching Technological Waves — Innovation with Equity*. Geneva: United Nations. DOI: 10.18356/9789210056588.

Zelek, A. (2021). COVID — czarny łabędź koniunktury w perspektywie najbliższych 2 lat (rozważania słuchaczy Programu MBA). *Zeszyty Naukowe ZPSB Firma I Rynek*, 59(1), 7–18.

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.7

Magdalena Daszkiewicz
ORCID: 0000-0003-1466-2454
Wroclaw University of Economics and Business
magdalena.daszkiewicz@ue.wroc.pl

Supporting self-esteem and self-acceptance in commercial brand campaigns created during a pandemic: Social and marketing aspects

Date of submission: 3.07.2022; **date of acceptance:** 22.08.2022

JEL classification: M31, M37, M39

Keywords: self-esteem, self-acceptance, self-esteem advertising, self-esteem campaign, marketing campaign, commercial brand campaign, social campaign, socially responsible advertising, pandemic

Abstract

Commercial brands are increasingly running campaigns supporting self-esteem and self-acceptance in response to social events, trends, and expectations related to social responsibility. By conducting such campaigns, brands try to pursue social and marketing objectives. The pandemic period was associated with increased problems and strengthening of social trends regarding self-acceptance and self-esteem. Therefore, the importance of actions related to these issues is of particular social relevance today. The pandemic conditions may have been reflected in the content and features of advertising campaigns and the associated consumer expectations and attitudes. In recent studies, far too little attention has been paid to intentional supporting self-esteem and self-acceptance in commercial brand campaigns. The article responds to an identified need for research concerning key messages and characteristic features of contemporary self-esteem advertisements, which may be linked to the specific social context. The important research issue is also the marketing and social value of advertising supporting self-esteem and self-acceptance. The article aims to identify key messages and features of commercial brand campaigns created during the pandemic that support self-esteem and self-acceptance. It also attempts to assess such campaigns in terms of their social and marketing value. These objectives were accomplished by using qualitative and quantitative methods. The research procedure involved three stages: desk research based on studies from the pandemic period regarding self-acceptance and self-esteem issues, a collective case study of cam-

paigns of three brands supporting self-esteem and self-acceptance and a diagnostic survey using an online questionnaire on the consumer perception of such campaigns and their value judgments resulting from expectations, motives, and impact assessments. The research is placed in the context of a pandemic, but the trends identified, key messages and features of the self-esteem campaigns, and assessment dimensions may remain relevant in the future.

Introduction

Commercial brands are increasingly running campaigns supporting self-esteem and self-acceptance in response to social events, trends and expectations related to social responsibility. They try to change consumers' attitudes and behaviours by stimulating self-positive feelings and fostering social acceptance of diversity. By conducting such campaigns, brands pursue the goals inherent in social campaigns and their marketing objectives.

The pandemic period was associated with increased problems related to self-acceptance and self-esteem, as evidenced by the results of various social studies. Therefore, the importance of actions related to these issues is of particular social relevance today. The pandemic period was also accompanied by a strengthening of social trends related to self-esteem and self-acceptance. These conditions may have been reflected in the content and features of advertising campaigns, as well as the associated consumer expectations and attitudes.

Previous studies have reported that consumers often compare themselves to the images presented in advertisements, which impacts their self-esteem and self-acceptance. There is a considerable volume of published studies describing the effects resulting from the stereotypical or idealised portrayal of people in advertising. Much of the previous research has focused on the negative impact of ads on self-perceptions. However, some studies indicate an impact of non-stereotypic commercials on positive behavioural changes.

In recent studies, far too little attention has been paid to intentional supporting self-esteem and self-acceptance in commercial brand campaigns. Few past studies in this regard focused on using consumers' feelings of self-esteem to evoke positive feelings towards the brands. Nowadays, advertising more often changes in response to social changes and growing expectations for brands related to social responsibility. The article responds to an identified need for research concerning key messages and characteristic features of contemporary self-esteem advertisements, which may be linked to the specific social context. An important research issue is also the social and marketing value of advertising supporting self-esteem and self-acceptance.

The research addressed two major objectives. The first was to identify key messages and features of commercial brand campaigns from the pandemic period that support self-esteem and self-acceptance. It was also determined whether they are linked with trends related to self-acceptance and self-esteem issues, the am-

plification of which was observed during the pandemic period. This was achieved through desk research and content analysis based on the collective case study of marketing campaigns by three purposefully selected commercial brands. The second objective was to assess self-esteem advertisements regarding their perceived marketing and social value. The attempt at such an assessment was based on the analysis of the online survey results on the consumer perception of the advertisements and their value. The survey covered three aspects of value judgments: expectations, motives, and impact assessments.

The study addressed the following research questions:

1. What are the key messages and features of contemporary self-esteem advertising? Are they linked to the social context and specific trends whose amplification was observed during the pandemic period?

2. How do consumers assess the value of advertisements supporting self-esteem and self-acceptance?

— What is the perceived impact of advertising on the perception of others and self?

— How do consumers rate the saturation of ads supporting self-esteem and self-acceptance?

— How do consumers evaluate advertising in terms of attention to supporting the self-acceptance of various groups? Whether or not the assessment differs for specific groups?

— What are the expectations related to supporting specific areas of self-acceptance and self-esteem? Does the assessment of expectations related to the need to support self-acceptance differ between the areas?

— How do consumers perceive social and marketing motives for running self-esteem campaigns?

— What is the perceived social impact of self-esteem advertising?

— What is the perceived impact of self-esteem advertising on brand image?

The research is placed in the context of a pandemic, but the trends identified, key messages and features of the self-esteem campaign, and assessment dimensions may remain relevant in the future. The study offers important insights concerning social and marketing aspects of contemporary advertising supporting self-esteem and self-acceptance. It also points to opportunities for further research which can develop knowledge in the important area of socially responsible advertising.

1. Theoretical framework of the research

1.1. Self-esteem and self-acceptance concepts

Self-esteem is one of the most widely studied concepts in the social sciences (Bleidorn et al., 2018), reflected in hundreds of scholarly articles and books that appear each year (Zeigler-Hill, 2013). In simple terms, self-esteem is a reflection of how

individuals perceive themselves and their sense of worth, so it expresses "the way people generally feel about themselves" (Brown and Marshall, 2006, 4). Zeigler-Hill (2013) support the rationale of defining self-esteem in broad terms as an intrapersonal, subjective evaluation that reflects an assessment of one's worth and value. According to the American Psychological Association, self-esteem reflects the cumulative perception of the qualities and characteristics contained in one's self-concept and the degree to which they are perceived to be positive (American Psychological Association, n.d.-b).

Yang et al. (2016) highlight that self-esteem is influenced by both psychological and social contexts (intrapersonal and interpersonal perspectives). Self-esteem results from a personal assessment of how well an individual is doing in areas they deem important. However, people's thoughts and feelings about themselves reflect also how they believe they are perceived and evaluated by others (Leary, Tambor, Terdal and Downs, 1995). Some researchers state that the self-esteem system is a subjective monitor of the degree to which the individual is accepted by others (Leary and Baumeister, 2000; MacDonald, Saltzman and Leary, 2003).

The American Psychological Association (n.d.-a) defines self-acceptance as "a relatively objective sense or recognition of one's abilities and achievements, together with acknowledgement and acceptance of one's limitations." Chamberlain and Haaga (2001) found a high positive correlation between self-acceptance and self-esteem. In another study, Macinnes (2006) indicated that an increase in self-esteem and self-acceptance positively affect psychological well-being.

1.2. The influence of advertising on self-esteem and self-acceptance

Previous research findings, supported by numerous studies, confirm the influence of advertising on viewers' self-esteem and self-acceptance, resulting from perception of themselves and their achievements. Much of the research focuses on the impact of advertising on gender image. Advertisements and media images strongly impact shaping gender images due to stereotypes and generalisations that "continue to objectify women and place stress solely on their appearance, thus devaluing their innate worth" (Rajagopal and Gales, 2002, 3333).

Several studies confirm that women often compare themselves to the image of women in advertisements. Matlin (1987) found that women in contact with idealised characters in advertising tend to be less satisfied with their attractiveness (Kulkarni and Banerjee, 2021). Banerjee and Kakadee (2020) highlight that fixing beauty standards through advertisements leads to the perpetuation of stereotypes.

The media influence individual's attitudes toward their body and appearance through social comparisons with media ideals. Yu, Damhorst and Russell (2011) showed that body images presented in advertisements influence viewers' attitudes toward brands. This is due to perceptions of attractiveness and similarity to ide-

alized and non-idealized advertising images. Their research results suggest the use of realistic model images reflecting a greater number of individuals' body images in advertising. Furthermore, several studies on the effects of very attractive models in advertising failed to unequivocally support their use. Bower and Landreth (2001) demonstrated that the perception of the model's expertise about the product is more important than the model's appearance in terms of advertising effects. This may suggest that confronting idealised advertising characters may not positively affect consumer self-esteem or the image of the brands presented.

Most of the previous research on the influence of advertising on self-acceptance and self-esteem has focused on the negative effects on body perceptions. However, there is also emerging research on the impact of advertising on self-perception in the context of self-worth and evaluation of self-capabilities in a social context. The stereotypical portrayal of women in advertising leads to a downplaying of their role, capabilities, and achievements. This causes women to set less ambitious goals and lose self-confidence. The findings of Jennings-Walstedt, Geis and Brown (1980) suggest that repeated exposure to non-stereotypic commercials might help produce positive and lasting behavioural changes. Women exposed to such advertisements show more independence of judgment and display greater self-confidence.

Advertising can thus influence consumers' positive self-perceptions by stimulating positive attitudes about themselves. Campaigns that use consumers' feelings of self-esteem have been around for a long time. The frequent motive of their impact on the audience was in the past to evoke positive feelings towards the brands. Therefore, Durgee (1986, 21) defined self-esteem advertising as "a type of advertising which attempts to alter consumers' attitudes and behaviour towards products by stimulating positive feelings towards themselves." His research results supported the hypothesis that ads positively influencing consumers' attitudes towards themselves have also positively affected their attitudes towards brands. The key reason for this influence is that the marketing approach is based on identifying, stimulating, and satisfying consumer needs. Self-esteem is one of the strongest psychogenic needs (Malär, Krohmer, Hoyer and Nyffenegger, 2011).

In a broad sense, self-esteem advertising can be defined as a type of advertising that stimulates consumers' positive feelings towards themselves, supporting their self-acceptance and self-esteem. Nowadays, advertising more often responds to social changes and growing expectations for brands related to social responsibility. Emphasising consumers' strengths and boosting their self-esteem and self-acceptance stems from the pursuit of marketing and social goals. Therefore, there is a need for research that takes into account the social and marketing value of self-esteem advertising.

1.3. Self-acceptance and self-esteem problems and trends in the pandemic context

The pandemic period is associated with the intensification of problems related to self-acceptance and self-esteem, which is confirmed by the results of various studies. The stress and anxiety caused by the coronavirus became a serious threat to psychological well-being in populations worldwide (Galea, Merchant and Lurie, 2020; Swami, Horne and Furnham, 2021). The additional anxiety associated with the pandemic may also have weakened the mechanisms we often use to help cope with negative thoughts.

According to the survey conducted by American Addiction Centers,[1] 1 in 5 (20%) Americans suffered from low self-esteem during the pandemic. A large percentage of those who experience low self-esteem (42%) stated these negative feelings have been worse than in previous years since the start of the pandemic. It is especially worrying that 16% of the respondents admitted they have drunk alcohol to try and ease negative feelings about their self-confidence (AdCare, 2021).

The findings of Swami et al. (2021) suggested that pandemic-related stress might shape body image outcomes under physical and social distancing conditions. Increased exposure to thin/athletic ideals via media messaging and simultaneous decrease in physical activity heightened concerns about weight and shape changes. The study's results confirmed that Covid-related stress and anxiety were associated with more negative body image.

The report *The Power of Women: What Are Contemporary Polish Women Like?* (Mobile Institute, 2020) showed that 48% of surveyed Polish women declared they did not like their bodies. During the pandemic, we could observe a noticeable strengthening of social trends related to self-acceptance and self-esteem. This concerns especially young women and girls. Mature women over 40 accept their bodies much more often. The research showed that self-acceptance increased with age.

Although there is a lack of statistical data on the increase in self-esteem problems, it can be seen in other studies on the psychiatric condition of society. According to estimates by the European Commission, before the pandemic, about 10–20% children suffered from mental illness problems. The current level is estimated at 20–25%. This may indicate the magnitude of the increase related to mental problems associated with the pandemic period. In reference to young people, even the term "the Covid generation" is used (Deeker, 20.01.2022).

During the pandemic, we could also observe the strengthening of specific trends related to self-acceptance and self-esteem. Identifying social trends influencing consumer behaviour can help determine the areas for the social impact of commercial brands. These are:

— self-acceptance and self-care (love yourself and mind yourself),

— body acceptance (body positivity, fat-shaming),

[1] The survey was conducted in March 2021 on a sample of 3,000 respondents.

— naturalness (natural beauty, true beauty, no filter, no make-up),
— authenticity (being yourself, be yourself),
— diversity, equality, and inclusion,
— women's empowerment and girls' empowerment.

These areas are often interconnected, which impacts the blurring of boundaries between the categories. The identification of the trends can be the basis for developing advertising campaigns responding to social changes and growing expectations related to social responsibility. The sensuosity to specific topics can also protect brands from being subjected to social criticism associated with the lowering of self-esteem of various groups and individuals. Identified trends can be expressed in the content and influence the features of advertisements that support self-esteem and self-acceptance.

2. Research methodology

The research was carried out using qualitative and quantitative methods. The research procedure involved three stages. The first was based on research from the pandemic period regarding self-acceptance and self-esteem issues. The results of these studies allowed us to determine the scale and character of the problems. At this stage, we also aimed to identify social trends influencing consumer behaviour and determine areas of social influence of commercial brands. In the second stage, a collective case study was conducted involving the campaigns of three brands supporting self-esteem and self-acceptance. The third stage involved a diagnostic survey using an online questionnaire on the consumer perception of the advertisements and their value resulting from expectations, motives, and impact assessments.

Identification of trends, issues, and campaigns related to self-acceptance and self-esteem was based on Google search results based on combinations of keywords such as: self-esteem, self-acceptance, self-love, self-confidence, trends, trend, report, campaign, campaigns, ad, ads, advertising, advertisement, Covid, pandemic, coronavirus.

The selection of the brands and their campaigns was based on a review of campaigns related to the analysed social aspects. We chose brands whose campaigns are closely related to supporting self-esteem and self-acceptance and clearly express this in their key messages. These were: Dove, Pantene, and L'Oréal. The content and the presentation of these messages were analysed. The synthesis of information led to conclusions about the key messages and campaign features.

A diagnostic survey on the perception of advertising campaigns that support self-esteem and self-acceptance was conducted using an online questionnaire created in Google Forms. It consisted of 12 questions, including single and multiple-choice cafeteria questions, linear numeric scale, and Likert scale questions. Respondents were informed about the topic of the study before the survey, as well

as about the complete anonymity of their responses. The survey was conducted in April/May 2022.

The sample consisted of 172 respondents. There is a significant disproportion in the gender representatives in the sample structure. Among the respondents were 134 females, 35 males and 3 non-binary persons, constituting respectively 77.9%, 20.3%, and 1.8% of the sample. The largest group of respondents (40.1%) were aged 18–26. Respondents between the ages of 46 and 55 accounted for 22.7% of the group, 15.7% were 36–45 years old, and 12.8% were 27–35 years old. Other groups were less well represented and accounted for a total of 8.8% of the sample.

To characterise the respondents, we asked them to rate their self-esteem using a 5-point rating scale from (1) "very low" to (5) "very high." The average self-esteem score was 3.66 for the entire sample. The respondents were also asked to rate how, in their opinion, their worth was perceived by other people. The average score in this case was slightly higher, at 3.76.

Due to convenience sampling, the analysis of the survey results concerns only the surveyed respondents.

3. Key messages and features of self-esteem campaigns

The content analysis was the basis for identifying key messages and features of self-esteem campaigns from the pandemic era and determined whether they are linked with established trends related to self-acceptance and self-esteem issues. The study considered three brands for which the topics of self-acceptance and self-esteem are crucial in marketing communications. These were: Dove, Pantene, and L'Oréal.

The first of the brands is Dove, whose campaigns have referenced self-esteem and self-acceptance themes for years. The key message of the recent Dove campaign expressed in the campaign name and the main slogan refers to "real beauty." The brand's advertisements address authenticity, natural beauty and diversity issues. The campaign messages are based on content designed to boost self-confidence and acceptance of one's appearance. By opposing the idealised, unreal image of women presented every day in the media and advertising, Dove wants to free women from the pressure to be perfect and flawless. Dove's campaigns also respond to the negative trend of body shaming, wanting to help end body judgment and spread more "body love." The key message conveyed in Dove's campaigns is that, in reality, we are all beautiful and that what we see and appreciate in ourselves depends only on our perception. So, we define beauty ourselves (Dove, n.d.-a).

During the pandemic, Dove declared that it would not digitally alter the shape of the human body: its size, proportion, or skin colour. Hence, its ads began to feature a logo with the slogan "no digital distortion." Dove launched the "Reverse

selfie" campaign (Ogilvy, 2021), which is part of the #NoDigitalDistortion movement to help build confidence and positive body image on social media (Dove, 2021). Dove encouraged women to accept ageing and not hide it, as it expresses experience and our journey through life. Dove supports showing ourselves as we are in real life, using the hashtags: #Dove, #ShowUs, #RealBeauty, and #RealWomen. In the campaigns Dove tries to break unrealistic beauty standards and help women as well as non-binary individuals "redefine beauty, on their own terms" (Dove, n.d.-b).

An analysis of the visual content of Dove ads shows that they most often depict a group of women with different images. Dove's ads portray the realistic look of women of different shapes, sizes, skin colours, ages, etc. In large part of the self-esteem ads, the Dove products are not presented directly, which indicates the social nature of the Dove campaign. In many ads, only the brand name and logo appear. In ads in which the products are presented directly, Dove encourages women to discover their real beauty by offering products that provide excellent body care. Thus, the products are presented not as increasing self-value but as allowing one to enhance self-acceptance by discovering one's own beauty.

The other brand that consistently supports self-esteem and self-acceptance is Pantene. The brand continues redefining what "beautiful" really means. In recent years, brand campaigns have focused on the areas of diversity, equality and inclusiveness, belonging to the "Be Yourself" trend. Advertising messages are based on two main keywords "beauty," "beautiful," and "power." The campaign "I'm BeautifuLGBTQ+" featured a range of people within the LGBTQ+ community and their own unique stories of transformation (Pantene, 2021a). Continuing its efforts, Pantene launched a new "Power to Transform" campaign in 2021 that recognises, celebrates and gives visibility to those who are transforming their lives. The crucial slogans of the Pantene campaign thus became "Family is beautifuLGBTQ" and "the power of visibility." Pantene supports LGBTQ kids and their families in taking pride in their identity, loving them unconditionally, and seeing them for who they truly are (Family Equality, 2021; Pantene, 2021b).

Most of Pantene's ads are related to their core competency, hair. The content of Pantene's self-esteem advertisements doesn't focus on products but hair, which is the source and tool of self-expression, pride and power. In the #HairHasNoGender campaign, the brand highlights the true power of hair in expressing identity. In the Polish ad, Michał Szpak argues that "one must have the strength to be different." Pantene's #PowerOfHair campaign highlights that hair also has the power to transform (Pantene, n.d.-a). In the campaigns "Power of Grey" and "My Hair won't be silenced," Pantene challenges "hair shaming" related to ageing or ethnicity, and discrimination against natural hair, which negatively affect self-esteem (Pantene, n.d.-b; Watts and Lynch, 2021). Analysing the key messages allows us to describe Pantene's campaigns as empowerment advertising.

The last brand analysed, L'Oréal, has used the same key slogan "Because you're worth it" in its campaigns for 50 years. Recently it has been expanded to include the phrase "Believe in yourself," which expresses the key message. This is a call for women to believe in their self-worth and recognise their innate value both as women and as individuals. According to the brand's messages, L'Oréal Paris products are designed to help women feel confident, beautiful and powerful. For the brand's advertising, the choice of content presenters was key. These include strong, intelligent, and inspiring women who represent brand values and create change. They are ambassadors to encourage other women to recognise their value, which comes from living your truth and feeling that "you are enough" (L'Oréal Paris, 2021).

The latest campaign launched during the pandemic was called "Lessons of worth." It took the form of inspiring testimonials from spokespeople including Kate Winslet, Camila Cabello, Helen Mirren, Jane Fonda, and Andie MacDowell, who talk about how the tagline's words "Because you're worth it" have empowered them. Powerful women like Kate Winslet argue that self-esteem comes from an inner conviction that "I'm worth it." Advertisements with an explicit social character are meant to express a message about "feeling brave enough to believe you're worth it." The brand ambassadors support authenticity, demonstrating that all differences, scars, and imperfections make us who we are. L'Oréal encourages us to believe and tell ourselves that we are "worth it," convincing us that what we have to offer is beyond our race, gender, body and age (L'Oréal Groupe, 2021).

The analysed campaigns from the pandemic period represent different approaches, but we can also find common features. Therefore, it is possible to draw some conclusions regarding contemporary self-esteem campaigns. They are united by values and a way of understanding self-worth which involves an inner sense of beauty and authenticity. Key features of the campaigns analysed include empowerment messages, encouraging the audience to feel confident, beautiful, and worthy. The campaigns combine the promotion of self-esteem and self-acceptance with respect for diversity and freedom to express oneself. They are linked to specific trends related to self-acceptance and self-esteem issues, the amplification of which was observed during the pandemic period.

4. The social and marketing value of self-esteem campaigns from the consumers' perspective

The diagnostic survey using an online questionnaire was conducted to assess the perceived value of advertising supporting self-esteem and self-acceptance. The study was conducted after a long period associated with pandemic conditions. The survey covered three aspects of value judgments: expectations, motives, and impact assessments.

The scope of the study addressed the following issues:

— subjective evaluation of the impact of advertising on the perception of others and self,

— subjective assessment of the saturation of ads supporting self-esteem and self-acceptance,

— subjective evaluation on giving appropriate attention to supporting self-acceptance of different groups,

— expectations related to supporting specific areas of self-acceptance and self-esteem,

— assessment of commercial brands' motives for running self-esteem campaigns,

— perceived social impact of self-esteem advertising,

— perceived impact of self-esteem advertising on brand image.

Table 1. Subjective evaluation of the impact of advertising on the perception of others and self

The way persons are portrayed in advertising affects:	% of responses					Mean	SD
	Definitely not (1)	Rather not (2)	Hard to say (3)	Rather yes (4)	Definitely yes (5)		
perception of other people	7.6	18.6	12.8	45.3	15.7	3.34	1.18
self-esteem	9.9	23.3	13.4	36.0	17.4	3.27	1.27

Source: own elaboration based on survey results.

First, respondents expressed their opinions on the impact of advertising and how people are portrayed on perceptions of others and themselves. The majority of respondents (61%) strongly agreed with or leaned toward the opinion that the way persons are portrayed in advertising affects the perception of other people. More than half (53.4%) of respondents admitted that how people are portrayed in ads affects their self-esteem. It should be noted that a significant proportion of respondents did not express strong opinions on this issue. The mean of the responses on a 5-point Likert scale was 3.34 for perceiving other people and 3.27 for self-esteem. This suggests that respondents recognise a slightly more significant impact of advertising on perceptions of others than self-perception.

The study attempted to assess the demand for self-esteem advertising, determining whether respondents feel an excess or insufficiency due to the saturation of this type of advertising (Figure 1). The vast majority of respondents (75%) described the number of ads supporting self-esteem and self-acceptance as insufficient ("too little").

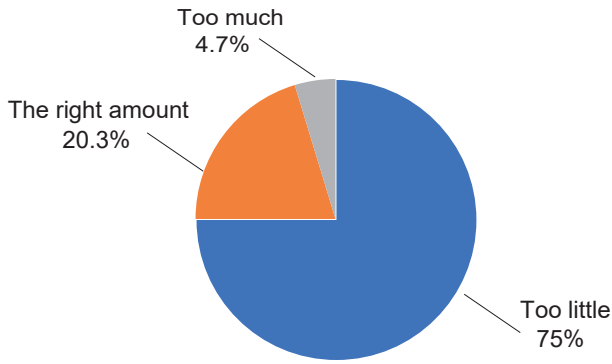


Figure 1. Subjective assessment of the saturation of ads supporting self-esteem and self-acceptance

Source: own elaboration based on survey results.

Table 2. Evaluation of giving appropriate attention to supporting self-acceptance of different groups

Advertising pays adequate attention to supporting the self-acceptance of:	% of responses					Mean	SD
	Definitely not (1)	Rather not (2)	Hard to say (3)	Rather yes (4)	Definitely yes (5)		
women	4.6	18.0	19.8	13.4	44.2	3.44	1.08
men	9.9	28.5	31.4	24.4	5.8	2.88	1.07
LGBT+ people	21.5	36.6	20.3	16.9	4.7	2.46	1.14
seniors	14.0	37.2	22.7	20.3	5.8	2.67	1.12
young people	6.4	19.8	28.5	32.0	13.4	3.26	1.11

Source: own elaboration based on survey results.

Respondents were also asked to assess whether advertising pays adequate attention to supporting the self-acceptance of people from various groups (Table 2). In assessing the attention to various groups, women received the highest average score calculated from responses on a 5-point Likert scale. Well over half of those surveyed (57.6%) considered the attention paid to women's self-acceptance in advertising appropriate (44.2%) expressed strong opinions in this regard). The survey results confirmed that consumers are aware of the focus of advertising supporting self-acceptance being mainly on women. Attention given to men received a lower rate — the mean for this group was 2.88. Notably, the most considerable portion of neutral responses concerned men (31.4%). A large percentage of respondents were aware of the insufficient attention given to the self-acceptance of LGBT+ people (58.1%) and seniors (51.2%). The mean scores concerning opinions on providing appropriate attention to self-acceptance of these groups were respectively 2.46 and 2.67.

Table 3. Consumers' expectations of the areas of self-acceptance and self-esteem that should be supported in advertising

Advertising should support:	% of responses					Mean	SD
	Definitely not (1)	Rather not (2)	Hard to say (3)	Rather yes (4)	Definitely yes (5)		
physical appearance	6.4	8.1	11.0	39.0	35.5	3.89	1.17
sexual orientation	5.2	14.0	27.9	28.5	24.4	3.53	1.16
ethnic diversity	2.9	4.1	13.4	32.6	47.1	4.17	1.00
opportunities for success	2.3	6.4	13.4	41.3	36.6	4.03	0.98
personal development	1.7	4.1	11.6	39.0	43.6	4.19	0.92

Source: own elaboration based on survey results.

Regarding the issue of consumer expectations related to advertising's support for specific areas of self-esteem and self-acceptance, the majority of surveyed consumers see the need to support a wide range of areas (Table 3). They include physical appearance, sexual orientation, ethnic diversity, opportunities for success and personal development, representing potentially attractive self-esteem advertising topics. However, the most definite opinions are for supporting "ethnic diversity" and "personal development" — respectively 47.1% and 43.6% expressed strong expectations for these areas. The mean calculated based on respondents' opinions expressed on a 5-point Likert scale was 4.19 for "personal development" and 4.17 for "ethnic diversity."

Table 4. Opinions on motives of commercial brands to support consumers' self-acceptance and self-esteem

Motives for supporting consumers' self-acceptance and self-esteem	% of responses
trends and fashion involving such activities	62.8
aiming to increase interest in the brand	39.5
the desire to increase the number of customers	35.5
social responsibility and conducting social programs	30.2
consumer pressure for this type of activity	14.5
other responses	1.2

Note: Respondents could indicate 1–2 answers

Source: own elaboration based on survey results.

From the point of view of the perceived value of advertising conducted in a social context, it is essential how consumers interpret the motives for conducting such activities. Respondents were therefore asked to express their opinion on the motives of brands in supporting consumers' self-acceptance and self-esteem (Ta-

ble 4). Most (62.8%) pointed to trends and fashion involving such activities. The following two most frequently indicated motives were related to the realisation of marketing goals, which are the increased interest in the brand interest in brand (39.5% of responses) and the larger number of customers (35.5% of responses). Nearly one-third of respondents indicated a motive of social responsibility and conducting social programs.

Table 5. Perceived social impact of advertising supporting self-esteem and self-acceptance

Advertising supporting self-esteem and self-acceptance:	% of responses					Mean	SD
	Definitely not (1)	Rather not (2)	Hard to say (3)	Rather yes (4)	Definitely yes (5)		
increases social acceptance of diversity	2.9	8.7	14.0	43.3	30.8	3.91	1.03
helps people with self-acceptance problems	4.1	7.6	28.5	37.2	22.7	3.67	1.04

Source: own elaboration based on survey results.

The crucial part of the survey focused on perceptions of the social impact of advertisements supporting self-esteem and self-acceptance (Table 5). The assessment referenced two aspects affecting self-evaluation derived from intrapersonal and interpersonal perspectives. Most respondents (74.1%) recognised the impact of advertising on the increase in social acceptance of diversity. A slightly smaller but significant portion of respondents (59.9%) believe that advertising supporting self-esteem and self-acceptance helps people with self-acceptance problems. For the second area, there were twice as many neutral responses. The averages calculated from the answers given on a 5-point Likert scale were 3.91 and 3.61 for these two areas. Thus, it can be concluded that respondents perceive a positive social impact of this type of advertising, which is somewhat more noticeable from an intrapersonal perspective.

Table 6. The perceived social impact of ads supporting body self-acceptance

The ads' perceived impact	% of responses
they increase acceptance of diversity	66.9
they give strength to those treated as "others" to fight prejudice and "hate"	61.0
they convince us that our value does not depend on our appearance	53.5
they simplify the understanding of self-confidence by limiting it to appearance and beauty	22.1
they reduce some people's motivation to work on themselves and their appearance	13.4
other responses	1.7

Note: Respondents could choose multiple options.

Source: own elaboration based on survey results.

Due to the increased problems regarding body acceptance identified in the pandemic period research, respondents were asked to express in-depth opinions on the social impact of advertising in this area (Table 6). The majority of respondents believe that the ads increase acceptance of diversity (66.9%) and add strength to those treated as "others" to fight prejudice and "hate" (61%). More than half of the respondents (53.5%) stated that such ads convince us that our value does not depend on our appearance. Given the multiple-choice option given to respondents, it seems interesting that more than one-fifth of respondents (22.1%) considered such ads as simplifying the understanding of self-confidence by limiting it to appearance and beauty. It is worth mentioning that 13.4 % of the survey participants state supporting body self-acceptance may reduce motivation to work on themselves and their appearance.

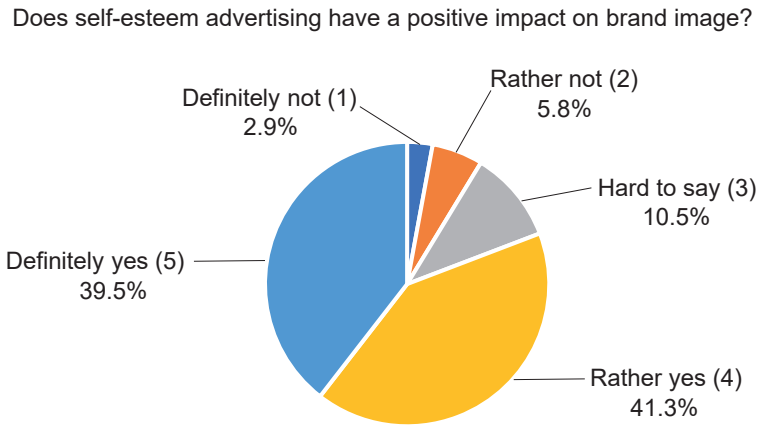


Figure 2. Opinions on the positive impact of self-esteem advertising on brand image

Source: own elaboration based on survey results.

The analysis of the survey results is finalised by identifying the perceived impact of self-esteem advertising on brand image. Most surveyed consumers (80.8%) recognise the positive impact of advertising on brand image, and almost 40% are convinced of it. The mean for responses reported on a 5-point Likert scale from (1) "definitely not" to (5) "definitely yes" was 4.09 with a standard deviation of 0.99. Considering the perceived low saturation of this type of advertising found in the first part of the survey, it can be concluded that their use is linked to marketing potential.

Conclusions

Self-esteem campaigns try to change the attitudes and behaviours of consumers by stimulating positive feelings towards themselves. In the past, a common motive

for self-esteem advertising was to evoke positive feelings toward brands in the audiences. The approach to self-esteem advertising has been changing, and we can observe a noticeable shift of emphasis.

The analysis of the campaigns from the pandemic period shows that brands are focusing less on products and more on consumers and values. Branded products are shown less often as a way to increase self-worth, rather as support for expressing consumers' real beauty and power. Ads increasingly present brands in the broader context associated with consumer self-esteem and self-acceptance. Self-esteem advertising seems to increasingly respond to social expectations and meet socially responsible goals.

The campaigns have some common characteristics, making it possible to draw conclusions regarding contemporary self-esteem advertising. They share similar values and understanding of self-worth that involve an inner sense of beauty and authenticity. Key features of the campaigns include empowerment messages, encouraging the audience to feel confident, beautiful, and worthy. The campaigns tie supporting self-esteem and self-acceptance to respect for diversity and freedom to express oneself. They do this by showing the possible areas of discovering one's value; enhancing the value of diversity; showing influential people who have based their success on their belief in their worth; demonstrating the worth and beauty of non-idealized characters; focusing on positive self-esteem, which is independent of the opinions of other people. It should be highlighted that the content and features of the analysed campaigns are linked to specific trends related to self-acceptance and self-esteem issues, the amplification of which was observed during the pandemic period.

The value of self-esteem campaigns was judged based on consumers' assessments of expectations, motives, and perceived impact. Our study shows that consumers recognise marketing and the social value of self-esteem advertising. The marketing value of self-esteem advertising is related to its positive impact on the image of brands, perceived low saturation, and identified expectations associated with this type of advertising. Assessment of the value of such campaigns is also influenced by the interpretation of motives for conducting such activities. According to respondents, they are primarily driven by trends and fashion. Consumers also note marketing motives and those related to social responsibility.

Consumers appreciate the positive social impact of this type of advertising, which is somewhat more noticeable from an intrapersonal perspective. There are also clear expectations of greater advertising involvement in supporting recipients' self-acceptance and self-esteem. These particularly relate to areas such as ethnic diversity and personal development. The research also showed consumer awareness of insufficient attention given to the self-acceptance of LGBT+ people and seniors.

The study concerned the subjective evaluation of advertising as a phenomenon, which may be considered as a research limitation. The value of specific

campaigns is, of course, related to their strategic assumptions, the way they are implemented, and the context resulting from particular conditions. The research also involved other limitations due to its scope and the way it was conducted (online survey method, convenience sampling).

The study was carried out after a period associated with pandemic conditions, which may have affected the results. COVID-19 has influenced the scale and awareness of social problems related to self-esteem and self-acceptance. However, the identified trends, the key messages and features of the self-esteem campaigns and associated assessment dimensions may remain relevant in the future, regardless of pandemic conditions. This suggests the need for further studies in the post-pandemic period and comparing the results.

Future research may also focus on measuring value in the context of specific brands and campaigns. It would be interesting to determine the impact of advertisements on self-acceptance in relation to previous brand perceptions and various levels of consumers' self-esteem. The evaluation of marketing and social value of the self-esteem advertising may demand demonstrating the long-term effects, the explicit identification of which seems to be difficult.

References

AdCare. (2021). *Low Self-esteem During the Pandemic*. Retrieved April 20, 2022 from https://adcare.com/blog/low-self-esteem-during-the-pandemic/.

American Psychological Association. (n.d.-a). *Self-acceptance*. Retrieved March 25, 2022 from https://dictionary.apa.org/self-acceptance?amp=1.

American Psychological Association. (n.d.-b). *Self-esteem*. Retrieved March 25, 2022 from https://dictionary.apa.org/self-esteem.

Banerjee, S., Kakadee, O. (2020). Grooming products and men: A study of primetime advertisements. In T. Juby, A. Augustine (eds.), *Gender Identity and Changing News Paradigms* (36–39). New Delhi: Excellent Publishing House.

Bleidorn, W., Hufer, A., Kandler, C., Hopwood, C.J., Riemann, R. (2018). A nuclear twin family study of self-esteem. *European Journal of Personality*, 32(3), 221–232.

Bower, A.B., Landreth, S. (2001). Is beauty best? Highly versus normally attractive models in advertising. *Journal of Advertising*, 30(1), 1–12. DOI: 10.1080/00913367.2001.10673627.

Brown, J.D., Marshall, M.A. (2006). The three faces of self-esteem. In M.H. Kernis (ed.), *Self-esteem Issues and Answers: A Sourcebook of Current Perspectives* (4–9). New York: Psychology Press.

Chamberlain, J., Haaga, D. (2001). Unconditional self acceptance and psychological health. *Journal of Rational Emotive and Cognitive Behavior Therapy*, 19, 163–176.

Deeker, W. (20.01.2022). The Covid generation: The effects of the pandemic on youth mental health. *Horizon*. Retrieved February 20, 2022 from https://ec.europa.eu/research-and-innovation/en/horizon-magazine/covid-generation-effects-pandemic-youth-mental-health.

Dove. (n.d.-a). *Dove Campaigns*. Retrieved March 12, 2022 from https://www.dove.com/us/en/stories/campaigns.html.

Dove. (n.d.-b). *Let's Change Beauty*. Retrieved March 12, 2022 from https://www.dove.com/us/en/stories/about-dove/change-beauty.html.

Dove. (2021). *The Selfie Talk: Social Media & Self-esteem*. Retrieved December 12, 2021 from https://www.dove.com/us/en/stories/campaigns/theselfietalk.html.

Durgee, J.F. (1986). Self-esteem advertising. *Journal of Advertising*, 15(4), 21–48. DOI: 10.1080/00913367.1986.10673034.

Family Equality. (2021). *Family is #BeautifuLGBTQ*. Retrieved December 20, 2021 from https://familyequality.org/Pantene/.

Galea, S., Merchant, R.M., Lurie, N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*, 180(6), 817–818. DOI: 10.1001/jamainternmed.2020.1562.

Jennings-Walstedt, J., Geis, F.L., Brown, V. (1980). Influence of television commercials on women's self-confidence and independent judgment. *Journal of Personality and Social Psychology*, 38(2), 203–210.

Kulkarni, R., Banerjee, S. (2021). Gender stereotypes in TV advertisements of Kannada channels. *Mass Media*, 9(107), 4–8.

Leary, M.R., Baumeister, R.F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, 32, 1–62.

Leary, M.R., Tambor, E.S., Terdal, S.K., Downs, D.L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, 68, 518–530.

MacDonald, G., Saltzman, J.L., Leary, M.R. (2003). Social approval and trait self-esteem. *Journal of Research in Personality*, *37*, 23–40.

Macinnes, D. (2006). Self-esteem and self-acceptance: An examination into their relationship and their effect on psychological health. *Journal of Psychiatric and Mental Health Nursing*, 13(5), 483–489. DOI: 10.1111/j.1365-2850.2006.00959.x.

Malär, L., Krohmer, H., Hoyer, W.D., Nyffenegger, B. (2011). Emotional brand attachment and brand personality: The relative importance of the actual and the ideal self. *Journal of Marketing*, 75(4), 35–52. DOI: 10.1509/jmkg.75.4.35.

Matlin, M.W. (1987). *The Psychology of Women.* New York: Holt, Rinehart & Winston.

Mobile Institute. (2020). *Siła kobiet. Jakie są współczesne Polki?* Raport. Retrieved March 20, 2022 from https://mobileinstitute.eu/kobiety

Ogilvy. (2021). *Reverse Selfie — Dove*. Retrieved December 12, 2021 from https://www.ogilvy.com/work/reverse-selfie

L'Oréal Groupe. (2021). *Lessons of Worth: L'Oréal Paris Celebrates Self-esteem and Women's Empowerment Because We're All Worth it!* Retrieved March 12, 2022 from https://www.loreal.com/en/news/commitments/lessons-of-worth/.

L'Oréal Paris. (2021). *L'Oréal Paris Celebrates 50th Anniversary Of "Because You're Worth It" Slogan*. Retrieved March 12, 2022 from https://www.lorealparisusa.com/beauty-magazine/makeup/makeup-trends/loreal-paris-because-youre-worth-it-anniversary.

Pantene. (n.d.-a). *#PowerOfHair*. Retrieved March 12, 2022 from https://www.pantene.co.uk/en-gb/power-of-hair/.

Pantene. (n.d.-b). *#ThePowerofGrey*. Retrieved March 12, 2022 from https://www.pantene.co.uk/en-gb/power-of-hair/power-of-grey/.

Pantene. (2021a). *I'm BeautifuLGBTQ+*. Retrieved March 12, 2022 from https://pantene.com/en-us/pride.

Pantene. (2021b). *Pantene | Sawyer & Ashley on the power of visibility*. Retrieved December 20, 2021 from https://www.youtube.com/watch?v=JFSVbBW5Cg4.

Rajagopal, I., Gales, J. (2002). It's the image that is imperfect: Advertising and its impact on women. *Economic and Political Weekly*, 37(32), 3333–3337. Retrieved March 12, 2022 from http://www.jstor.org/stable/4412464.

Swami, V., Horne, G., Furnham, A. (2021). COVID-19-related stress and anxiety are associated with negative body image in adults from the United Kingdom. *Personality and Individual Differences*, 170, 110426. DOI: 10.1016/j.paid.2020.110426.

Watts, H., Lynch, L. (2021). *Gold Series from Pantene Teams up with Black Minds Matter and Project Embrace in Campaign to End Discrimination against Afro Hair in the UK*. Retrieved December 12, 2022 from https://tinyurl.com/2ker3nmh.

Yang, J., Xu, X., Chen, Y., Shi, Z., Han, S. (2016). Trait self-esteem and neural activities related to self-evaluation and social feedback. *Scientific Reports*, 6, 20274. DOI: 10.1038/srep20274.

Yu, U.J., Damhorst, M.L., Russell, D.W. (2011). The impact of body image on consumers' perceptions of idealized advertising images and brand attitudes. *Family and Consumer Sciences Research Journal*, 40(1), 58–73. DOI: 10.1111/j.1552-3934.2011.02088.x.

Zeigler-Hill, V. (2013). The importance of self-esteem. In V. Zeigler-Hill (ed.), *Self-esteem* (1–20). London: Psychology Press.

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Ekonomia — Wroclaw Economic Review 28/3 (2022)
Acta Universitatis Wratislaviensis
No 4133

https://doi.org/10.19195/2658-1310.28.3.8

Aleksandra Sztuk
ORCID: 0000-0002-1845-0363
Wroclaw University of Economics and Business
aleksandra.sztuk@ue.wroc.pl

Competitiveness of cities in the post-pandemic time: The perspectives of residents and tourists

Date of submission: 31.05.2022; **date of acceptance:** 1.08.2022

JEL classification: M31

Keywords: city image, territorial marketing, pandemic, tourism, society

Abstract

The COVID-19 pandemic has sparked an unprecedented crisis in the globalized, modern economy. Cities actively promoting their image faced the challenge of maintaining a positive perception of the place and modifying their offers due to massive coronavirus infections. As a time of gradual stabilization, the post-pandemic period requires cities to introduce or continue appropriate changes in their marketing strategy to ensure competitiveness to the effects of the pandemic. This paper aims to present selected changes in the city offers addressed to residents and tourists during the pandemic and to determine how these changes may affect the city's image as one of the factors of competitiveness. A review of literature and research published in the years 2021–2022 was used, presenting solutions implemented by cities to maintain a positive image, demand, and stakeholder satisfaction. Examples of changes applied by territorial units are described from the perspective of two primary target groups of the cities: residents and tourists. Based on the analyzed secondary data, the author notes an increase in the interest of local communities in nearby tourist destinations and the need to transform marketing messages that encourage residents to engage in local tourism. Among some of the city's recipients there was also more attention given to the use of coworking spaces. Also, a positive impact of temporary urban planning on community participation in urban marketing was observed. Referring to the literature related to the city image, these changes can directly affect the competitiveness of cities and support the gradual economic recovery after the crisis caused by the global pandemic.

Introduction

The challenge of increasing competition concerns not only economic entities and representatives of business environment but also territorial units (cities, regions, countries). Cities compete for access to financial resources, the interest of desired groups of recipients, capital maintenance, and the choice of their place as the location of essential institutions and investments. A positive image, which is an intangible, critical resource of a city, significantly affects the territory's competitiveness, facilitating the achievement of the intended goals.

The image of a given city determines the choices of recipients. For tourists, preconceptions about the city can influence the course and feel of the actual stay, and then future decisions about re-using the place (Stylidis, Belhassen and Shani, 2017). For many cities, the tourism industry is a leading high-income generating function, securing the city's economic situation. How the inhabitants perceive the city indirectly influences the assessment of the quality of life (Glińska, 2010). If the inhabitant perceives the city as a safe, developmental place that allows for the implementation of desires, the probability of migration decreases. For cities, both attracting new and retaining permanent residents is a critical point. The economic and social situation of the city largely depends on the number and diversity of the community permanently residing there (Insch and Florek, 2008).

The coronavirus pandemic has led to the suspension or reformulation of cities' projects, strategies, and investments. However, not the planned expenses for investments but their character have changed, and many cities are planning investments projects related to building a positive image, which the pandemic has tarnished (Dębkowska et al., 2020). The competitiveness and resilience of the city's brand are considered the overarching characteristics during the COVID-19 pandemic and in the post-pandemic future (Setiadi, Rudwiarti, Priscilia and Wardhani, 2021). These features predominantly determine the city's profitability through efficient customer service and meeting the expectations of the city's offer recipients. City marketing specialists encountered several challenges requiring adjusting to the situation (Streimikiene and Korneeva, 2020).

The effects and intervention measures related to the coronavirus pandemic formed the basis of research papers published rapidly among scientists representing various fields, including management sciences (Karakose et al., 2021). Regarding territorial marketing and the city's image, researchers have been raising topics that require concentration since 2019, including the smart city concept, digital methods of promoting the city, and internal stakeholders participation in creating the city brand. The pandemic only emphasized the importance of a better understanding of these issues (Kavaratzis and Florek, 2021). As a theoretical work, this paper will present these topics in the context of the city's image and competitiveness.

The article aims to present selected changes in city offers during a pandemic and to determine how these changes may affect the city's image as one of the factors of competitiveness. The presented solutions are considered to generate interest and accomplish the requirements of two primary groups of stakeholders: residents and tourists. The final question is whether these solutions should be sustained in the post-pandemic period and how they will contribute to the attractiveness of cities, understood as the ability to attract specific customers. It is believed that in the face of a significant economic crisis caused by the pandemic, cities are obliged to implement modifications and search for methods to rebuild them.

1. Theoretical framework of the research

More than half of the world's population (55%) live in cities (WHO, 2020). Cities are now referred to as "pandemic platforms"; after the COVID-19 pandemic is over, cities will face the challenge of redefining the area's security policy in this respect by implementing specific tasks (Honey-Rosés et al., 2020). It is also worth bearing in mind that some of the activities carried out in this area may take the form of theater, which is only aimed at minimizing the fears of potential city customers to increase the demand for the services offered (Martínez and Short, 2021).

In the first year of the pandemic, as the SARS-CoV-2 virus dynamically evolved into an increasingly contagious form, it was difficult to estimate when the pandemic would end. At that time, the marketing activities of cities assumed short-term forms, departing from the medium and long-term actions typical for this area (Wen, Kozak and Yang, 2021). Nevertheless, some cities took extraordinary measures to increase the internal resilience of the economic system to the market crisis caused by mass infections and the prospect of their growth (Kowalczyk-Anioł and Pawlusiński, 2021). The behavior of society in the context of travel and movement has also changed, which had an impact on changes in preferences, including that of a tourist destination (Sztuk, 2021).

The literature emphasizes the need to imagine the reconstruction of the functioning of cities in the post-pandemic period, assuming that globalization will be a significant factor in prevailing against recurring pandemics (Antràs, Redding and Sossi-Hansberg, 2021). Due to the pandemic, the marketing strategies required an urgent reformulation and rethinking of how future campaigns promoting the city should be conducted (Dašić and Dašić, 2021). However, the authors point out that the direction in which countries and cities will go while establishing new aspects in creating the image of the territory after the pandemic, is unknown. Nevertheless, along with the gradual decline in infections, cities were looking for solutions allowing for economic reconstruction on the local market, by applying, for example, changes in their marketing offers.

2. Research methodology

This article aims to present selected changes in city offers during a pandemic, addressed to residents and tourists, and to determine how these changes may affect the city's image as one of the factors of competitiveness. The research goal was to identify the modifications described in the scientific studies in the offers of cities during the pandemic to maintain the competitiveness of the territorial unit. The focus was only on marketing aspects, such as modifying the offer, changing the target group, as well as the methods and content of communication with potential customers. These aspects are part of the city's image.

For this purpose, a scoping review was carried out, allowing for the organization of the current state of knowledge and integrating the conclusions from the collected research works. Therefore, texts containing quantitative and qualitative research and review articles were included. A formulated research question regarded the types of modifications in the marketing offers of cities addressed to residents and tourists during the pandemic. Two databases of peer-reviewed literature were used to collect the research material: Scopus and Web of Science, as well as the publicly available search engine for research papers — Google Scholar. The following keywords were used: city marketing, territorial marketing, city image, city offer, tourism destination, COVID-19 pandemic, post-pandemic period, residents, tourists. The inclusion criterion was applied, limiting the searched materials to reviewed articles, written in the English language, regarding the area of management, with free access, published in 2021–2022. This paper focuses on the issue of creating the image and competitiveness of the city. These concepts are primarily of interest to marketers, but they also should have a special place in the strategy and vision of the city created by local authorities, which is why this paper and the analyzed research have been embedded in the discipline of management sciences. In 2021, the specificity of the COVID-19 disease was considered better recognized, and the multiple, quite schematic waves of infections allowed specialists to predict the future to a greater extent in this respect. Therefore, corrective and intervention measures in territorial marketing could have been more closely related to the perspective of the post-pandemic period.

In the first stage of the search, 44 articles were collected, and 16 were selected after analyzing abstracts. At the stage of analyzing scientific articles, it was found that in terms of creating the image of the city and raising its position among others, specific topics turned out to be critical, especially in the crisis caused by the pandemic. These topics include: insufficient involvement and participation of internal stakeholders, creating value for residents, the smart city concept, and promoting the city with the use of digital technologies. Therefore, further literature analysis has been deepened by selecting and focusing only on the above topics, which is allowed in the scoping review methodology (Ćwiklicki, 2020). Based on territorial marketing literature, it was considered how the solutions implemented by cities could

affect the perception of the place, making it more competitive from the perspective of tourists and residents. Then, by synthesizing the collected information, it was subjectively determined whether the analyzed modifications should be sustained in the period after the pandemic in order to contribute to increasing the attractiveness of cities, understood as the ability to attract specific customers. The literature review ended with a narrative reporting of the collected results and conclusions.

3. Study

3.1. Image of the city as a factor of competitiveness

A city's competitiveness is the degree of a territorial unit's ability to attract or acquire various resources needed in a given situation, economic development, provide services, and acquire customers. At the same time, all these activities should be carried out reasonably quickly and effectively to make the city more prosperous and ensure the prosperity of its inhabitants (Ni and Kresl, 2014). The use of marketing instruments for the city serves to improve its attractiveness and emphasize its uniqueness against other cities. Therefore, it is believed that these promoting activities dynamize the city's competitiveness.

Territorial marketing is based on three basic premises: a place is a complex mega product; a city functions in a competitive environment; the marketing of a given unit increases its competitiveness (Kamiński, 2011). Thus, depending on the specificity or leading activity, a city has a defined group of recipients whom it tries to win and maintain while meeting their expectations. Other cities with similar characteristics or resources may propose an offer which constitutes an alternative to a potential consumer. Therefore, cities use available marketing tools that facilitate the fight for customers and interest in the offer. Cities build and strengthen their competitiveness using material and non-material resources — including the city's image (Gosik and Żelazna-Jochim, 2018). In the classical sense, the image of a place is defined as the sum of beliefs, feelings, and knowledge that a person has about a given place (Kotler, Haider and Rein, 1993). In the case of territories, their image is considered a critical resource because it influences the context in which the messages regarding the offer, changes, projects, and events taking place in the city are received (Anholt, 2007). This means that the actions taken by a city are perceived through the prism of its image, and on this basis are criticized or approved by the audience. Countries and cities constantly compete with one another to attract different audiences. Reputation and perception determine the opinions and choices of these recipients, determining the city's position against others.

The image should be built upon the identity of a given place. Based on the concept of corporate identity (Klage, 1991), three components make up the city identification system, which the authorities can modify: city behavior, city design, and the city's communication system (Figure 1).

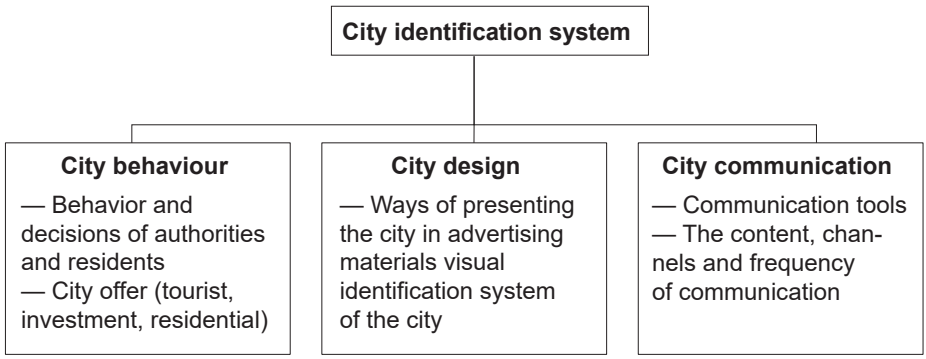


Figure 1. Elements of the city identification system

Source: own elaboration based on Szromnik (2016).

The first dimension relates to behaviors and decisions made within the city, which can be observed or felt by its observers and users. The ones displaying the behavior are the authorities, residents, and economic entities operating there. An essential element of the city behavior area is also the atmosphere and the city's offer, as well as its modifications and development. The city design area includes marking streets, paths, facilities, promotional materials, graphic design, and the decor of municipal facilities. The specificity and legibility of city marking affect the comfort and ease of moving around the city. A crucial part of this area is the designed, unique visual identification system, which includes a logo, a promotional slogan, and colors presented on the city's promotional materials. The pillar of city communication refers to the ways, styles, frequencies, instruments, and communication channels of the authorities intending to transmit information as well as build relations between themselves and the city's consumers. This information most often concerns the city's economic and social situation, justification of decisions made and plans, as well as the presentation of the city's marketing resources.

The city's identity, which can be seen as competitive when compared to the others, draws customers' attention to a given place. Moreover, it makes it easier for the recipients to organize the incoming information about the city because these messages are given a positive context from the top (Anholt, 2007).

Researchers indicate that various audiences perceive the city differently (Beckmann and Zenker, 2013). Differences in the perception of a place by residents and tourists result mainly from the length of their stay in the city (Merrilees, Miller and Herington, 2009). The structure of the city's image from the tourists' perspective is referred to as the image of a tourist destination. The image of a destination has many essential functions (Łuczak, 2002). In the context of the development of the tourism industry in a given territory, the most important seems to be the decision-making function. The way a person perceives a place — shaped based on experience or even only second-hand information about the

city — influences the efforts made to improve this place (Stepchenkova and Li, 2014). The city's positive image encourages tourists to choose it as a destination and increases the likelihood of them visiting it again. Managing the city's good reputation is a process which requires constant strengthening through the use of positive messages based on a coherent strategy.

The city may use an appropriately created and communicated image to improve its competitiveness compared to other territorial units. The authorities may influence the city's image by introducing changes in three dimensions: the city's offer, the manner of presenting the city, and methods of communicating with the city's recipients.

3.2. Perspective of tourists

Tourism is one of the sectors most affected by the pandemic economic crisis and has suffered substantial financial losses (Panasiuk, 2020). A factor contributing to the tourism industry crisis was the fear of society and the fear of infection, which altered people's behavior and resulted in changes in the forms of moving and traveling (Zenker and Kock, 2020). It caused difficulties in formulating marketing messages in cities due to the uncertainty related to the future behavior of tourists (Li, Nguyen and Coca-Stefaniak, 2020).

In Slovakia, research among tourist and municipal organizations was conducted to determine the impact of the coronavirus pandemic on changes in the offers and marketing communication of these entities (Darázs and Šalgovičová, 2021). Slovakia's tourism potential has so far been underused for domestic tourists. The reason is the low regional identity of the local community and marketing efforts aimed mainly at external tourists. The study results provided valuable information on the significance of a quick response related to the change of marketing content provided by entities. In some of the examined cities, a positive change in interest regarding local tourism was noted. Two aspects were identified as the main factors of this success: publishing content which popularizes local culture and an increased frequency of published information. Entities that took steps to change published marketing messages directed messages to residents instead of tourists from distant cities or other countries. The content was intended to arouse the recipients' interest, presenting the identity of a given place attractively from a tourist's point of view. Among the organizations which experienced tremendous losses and a particular decrease in tourists interest, the majority of them (70%) did not take any remedial efforts in the area of marketing strategies (target, content, and frequency). Promoting the tourist offer among the local community affects the increase in demand for tourist attractions in the city. It also increases the local awareness and knowledge of the city's attributes. Consequently, the knowledge of these features allows for better identification of the resident with the place, which leads to a better image from their perspective (Lawton, 2005). However, in order

to effectively promote the tourist offers of cities among internal recipients in the long term, marketing messages are not the only thing which should be changed. The offer should be adjusted to local communities' preferences and economic situation, which requires a deeper diagnosis (Lück and Seeler, 2021).

The change of target audience and strategic goals related to marketing activities also took place in cities where revenues are generated mainly based on the activities of entertainment, cultural, and recreational facilities — entertainment-dependent destinations (EDD) (Dubois and Dimanche, 2021). The pandemic, the necessity to maintain social distance, the public fears, and an aversion to destinations besieged with tourists disrupted the current functioning and future strategies of promoting these places worldwide. In a group interview in which the participants were experts from entertainment industries located in cities, various scenarios of the functioning of the centers in the post-pandemic period were discussed. In order to rebuild and then gradually increase the interest of recipients in the city offer, EDDs during the pandemic changed the target groups to people living in nearby cities as well as their friends and relatives. This group will be sustained and gradually expanded to include regional tourists in the post-pandemic period. Increasing the financial outlays allocated to public relations activities will be inevitable. The main goal of these activities will be to create conviction among potential customers that cities will make every effort to protect the health of visitors and build trust. From the perspective of long-term image building, focusing on internal recipients and their relatives may bring a new, constantly expanding base of customers to the destination. Opinions of relatives and friends constitute the most reliable and influential source of information in the city's tourist offer (Thompson et al., 2017). Destinations can use the potential of internal customers in this regard, encouraging them to share their feelings and opinions on individual elements of the city's offer. Whisper marketing effectively promotes the city's image, but it requires appropriate stimulation (Siejak, 2010). From the perspective of the marketing policy of EDDs, focused on building trust and a sense of security, the opinions of friends may be one of the most critical determinants of image reconstruction.

A dedicated digital application designed to support navigating the city and obtaining information about it seems to be a particularly advanced form of promoting a given territorial unit. Using the application, people who intend to visit the city can plan their time more efficiently, receiving information on facilities, monuments, restaurants, and accommodation facilities and the possibility of booking them. Bantul, located in Indonesia, is the owner of the application designed for this purpose. The mobile application Jelajah Bantul supports the implementation of the "Bantul Smart City Master Plan," consisting of six "smart" dimensions: governance, branding, economy, living, society, and environment (*Dimensi Smart Branding*, n.d.). The Smart Branding dimension of the city is carried out in three areas: business, tourism, and the city's image. The application is intended to support competitiveness and attract visitors' interest. From a marketing point of view,

an important function offered by the application is the possibility of exchanging opinions on specific places in the city. People who do not have previous experience with the use of the city's offers can thus minimize the risk of making choices about the city, and people who share their opinions act as the ambassadors. This is also one of the marketing goals of tourist providers: cause positive emotions in the visitors and make them share voluntarily with as many people as possible, primarily through modern mass media channels (Kosieradzki, 2016). The application was implemented in 2017, intended for use by residents and tourists. In 2021, during the pandemic, but after most of the restrictions had been lifted, a quantitative study was carried out among city residents (Setiadi et al., 2021). It was aimed to determine what elements of the application should be modified so that its users can efficiently use the city's offer during the coronavirus pandemic. Some respondents called for implementing a "health protocol" in the application — a source of information on possible disease clusters and the degree of occupancy in facilities. Residents also expected information on alternative venues to be included (cafés, restaurants, cinemas, swimming pools, etc.) if one reaches the maximum or an excessively high number of users and bookings. Implementing the postulated elements will increase public trust as well as help get support for the local community in terms of resumption of tourist traffic. Surveying residents' opinions on tourist destinations are critical to the city's offer and image. Planned projects and investments targeting the tourist market will be made difficult or entirely withheld if the inhabitants have a negative stance on the development of the tourism industry and visiting tourists (Gursoy, Chi and Dyer, 2010). Residents as a community are part of the city's image — their behavior towards tourists affects the quality of their stay and their feelings towards the city, which in turn influences decisions about future visits and recommendations

During the pandemic, it turned out that many feints, functions, and tasks could be permanently performed in an effective manner remotely. Even after the restrictions were lifted, many business meetings are still held online due to the higher attendance and convenience. Managing a territorial unit is a favorable situation, as it enables a departure from city zoning and accumulation of road traffic connections in specific directions and moments of the day and week. As a result, coworking spaces offered by cities are becoming more and more popular. These offers are addressed both to residents who, for various reasons, cannot work in their apartment, and to people outside the city, thus promising the opportunity to explore a new place. The external user group of coworking spaces should be called digital nomads — people who use modern technologies and devices to carry out work and communicate with others, changing the place of accommodation or stay for tourist, recreational, or cognitive purposes (Fuchs and Sandoval, 2014). Coworking spaces have many advantages from the perspective of people working remotely — they increase the productivity of the work performed, foster building social bonds, do not require long-term obligations (Chevtaeva, 2021), and provide comfortable,

high-class equipment. The coronavirus pandemic has significantly accelerated the transition from stationary to remote work in many places through government orders to isolate and minimize movement. Some countries see the touristic potential in digital nomads to such an extent that, to recover from the pandemic crisis, they are introducing attractive visa policies facilitating short-term travel for remote workers (Bacchi, 6.08.2020). Also, the coronavirus pandemic has sparked interest in a digital nomad's work and lifestyle experience among people already working remotely from their own homes (De Almeida, Correia, Schneider and De Souza, 2021). The digitization of jobs and the emergence of new professions are expected to continue. Whether cities quickly react to the expansion of the offer in this area or not may directly affect their competitiveness and ability to attract valuable human capital.

3.3. Perspective of residents

In the first phase of the pandemic, the organization, coordination, and implementation of guidelines and solutions limiting people-to-people contacts were critical. As a result, new regimes for the functioning of these spaces in the conditions of the COVID-19 pandemic emerged (Cheshmehzangi, 2020). The first reactions from national governments and city authorities were manifested in the closure and order to suspend the operation of the so-called public spaces (service places, catering establishments). In this phase, it was essential for city authorities to implement top-down guidelines imposing restrictions on places used for public purposes (Kowalczyk-Anioł and Pawlusiński, 2021).

Closing or reducing the activities of public places sparked a discussion on how the temporary use of vacant space could meet the needs of the local community limited by restrictions. The feature that characterizes temporary use is the short time frame during which various initiatives, meetings, and projects carried out on a wasteland can occur. These spaces may be, for example, former industrial buildings, warehouse halls, closed office spaces, shops, apartments, and other public buildings. In metropolitan cities, such as Berlin, Bremen, and Athens, wastelands have been reorganized, renovated, and adapted to the requirements of selected social groups. There are numerous examples of abandoned properties providing space for the development of community initiatives, e.g., artistic circles. Temporary use primarily facilitates grassroots initiative support, implementation, and promotion. Although the concept of temporary use of wasteland for real estate is not innovative, it has gained popularity in the last two years. From the point of view of the city authorities, the provision and reorganization of public spaces is such an important initiative that it is used as one of the main elements of city marketing campaigns which create the city's identity. A review article dealing with this issue showed that it had become part of image campaigns in places offering residents temporary use during pandemic (Karachalis, 2021). Cities more and more often

use social initiatives and various types of integrating events to improve their image and reputation, departing from commercial, traditional forms of advertising (Govers, 2018). Re-planning the use of urban wastelands to implement grassroots initiatives and provide additional space, gives the city such an opportunity. Residents involved in projects changing the specificity of the city become co-authors of its image, making it more authentic and faithful to the local identity. Reusing space during a pandemic not only affects the satisfaction of residents' needs and makes their identification with the city more robust, but it can also be an attractive aspect of the city as a tourist destination. Arts and crafts projects created in wastelands can be an alternative to mass attractions, one presenting the city's cultural heritage. They may make its image competitive in this respect.

Massive, long-term blockades and restrictions imposed on commercial activities and public institutions' provision of social services forced cities to transform in this area rapidly digitally. The digitization of services was noticeable in many countries and cities, mainly in citizen, patient, and petitioner services. Moreover, solutions have been introduced to make communication with the inhabitants of individual cities more efficient, informing them about potential infectious points. These solutions make a given city "smart," that is, one which uses technology to efficiently provide services and increase its efficiency in this area and efficient communication with the local community (Azkuna, 2012). Such solutions make it possible to quickly and efficiently solve emerging problems and minimize their effects. Considering the challenges and consequences caused by the coronavirus pandemic, each modern city should strive to implement the features and achieve the status of a smart city. This will make the functioning of the city much smoother, especially from the perspective of possible future blockades and economic crises caused by recurring pandemics. The implementation of such solutions by territorial units has become increasingly important during the coronavirus period due to the need to protect the life and health of citizens. The most visible improvements have been introduced in the form of e-medical visits, public e-services, e-education, and e-government (Brodowicz, 2021). Supporting public services with technology ensures speed and comfort while minimizing the risk of virus transmission. This significantly influences the citizens' sense of security and their well-being (Hassankhani, Alidadi, Sharifi and Azhdari, 2021), creating positive feelings towards the city they live in and affecting its perception. From a marketing standpoint, smart cities have more opportunities to engage in dialogue with residents, thus contributing to the strengthening of relationships. This creates more opportunities for the endogenous development of the city by adapting its offer to the needs of residents in collaboration with them. After all, it is them who should be the most important stakeholders among various recipients of the city's image (Kesgin, Murthy and Pohland, 2019).

Conclusions

It is expected that modifications introduced by cities during the pandemic will become relatively permanent elements of the cities' offer and promotional activities. These changes may positively impact the city's image, determining its competitiveness, especially in the post-pandemic period. No city in the world exists in a vacuum, and the global pandemic has forced authorities to learn to react quickly.

Decision-makers and city managers are obliged to follow the trends in order to generate income. During the pandemic, one of them turned out to be coworking spaces, which have been the object of growing interest among people working remotely. These objects may in the future, due to the digitization of most workplaces, constitute a significant part of the city's offer. The creation of coworking spaces is a new, rapidly developing basis for intercity competition (Luo and Chan, 2020). Moreover, it makes it possible to attract to the city new groups of recipients who locate human and financial capital, which positively impacts the city's social and economic structure.

During the pandemic, the target group has changed in many cities heavily depending on tourism and entertainment due to international travel restrictions. In addition to the growing demand among residents for the city's tourist attractions, focusing on internal addressees brings multidimensional effects that impact the city's competitiveness. Promotion of local attractions among residents allows them to see and get to know the city's features better. In turn, it may affect the willingness to share this knowledge among other recipients, making residents the city's ambassadors (Palmer, Koenig-Lewis and Medi Jones, 2013). Residents belong to the leading group of city spokespeople who, through informal communication with potential customers, make the identity of the place more visible and influence its perception (Casais and Monteiro, 2019). Even though in the first two years of the pandemic, the public's willingness to take local trips increased and then decreased due to mass vaccination (European Travel Commission, 2021), from the perspective of the crucial role of residents in the marketing of places, it is recommended to continue promoting the city's local attributes among internal communities.

In cities with a tourist function, it is essential to research residents' opinions on changes and plans contributing to this industry's development as well as meet their needs. In the post-pandemic period, the inhabitants' opinion is of critical importance for the effectiveness of tourism. Promoting the city's image to external groups is easier when the local community understands and agrees with the city's goals in this regard. Therefore, surveys among residents, although often neglected, provide valuable information that appropriately directs the marketing strategy of a place (Florek, Glińska and Kowalewska, 2009). If the city uses advanced tools to promote its image, such as a dedicated application, then it creates a wide field for interaction between internal and external groups. In this way, it engages its

residents as city spokesmen, the most influential source of marketing messages, and tourists as opinion-makers of tourism services. For the image of the city to be presented in a positive context, making the city competitive from the perspective of tourists, the authorities should take care of the residents' needs. It is essential to reduce friction between these groups, especially in terms of security.

Including residents in decision-making processes regarding, for example, the use of public spaces temporarily, makes the local community more active and integrated citizens. The marketing literature emphasizes the need to involve residents in the city's image-building processes, which brings several benefits (Hankinson, 2004). Supporting grass-roots initiatives affects the authenticity of the image, which becomes more faithful to local identity, distinguishing the city from the others. Encouraging residents to cooperate creates an opportunity for the authorities to better meet their expectations and needs. Active participation of residents in the city's current affairs also positively impacts the assessment of the quality of life (Michalska-Żyła, 2015), which reduces the risk of migration, including valuable human capital for the city's competitiveness.

When it comes to servicing residents, smart solutions seem to be the critical issue streamlining this process. Most people have similar basic expectations of the city as a place of permanent settlement (Insch and Florek, 2008). These requirements relate mainly to the implementation of primary needs. The implementation of advanced solutions expands the city's offer, accelerates its development on many levels, increasing its position compared to others and making it competitive from the perspective of current and future residents. The technological transformation of territorial units not only affects comfort and convenience, but — in the situation of the rapid spread of infectious diseases — it also serves to protect the health and life of citizens.

Acknowledgments

The project is financed by the Ministry of Science and Higher Education in Poland under the program "Regional Initiative of Excellence" 2019–2022, project number 015/RID/2018/19, total funding amount: 10,721,040 PLN.

References

Anholt, S. (2007). *Competitive Identity: The New Brand Management for Nations, Cities and Regions.* New York: Palgrave Macmillan.

Antràs, P., Redding, S.J., Rossi-Hansberg, E. (2021). Globalization and pandemics. *National Bureau of Economic Research*, 304, 27840.

Azkuna, I. (2012). *Smart Cities Study: International Study on the Situation of ICT, Innovation and Knowledge in Cities.* Bilbao: The Committee of Digital and Knowledge-based Cities of UCLG.

Bacchi, U. (6.08.2020). Code on the water: Countries court digital nomads amid coronavirus. *Reuters*. Retrieved May 2, 2022 from https://www.reuters.com/article/us-health-coronavirus-digital-nomads-trf/code-on-the-water-countries-court-digital-nomads-amid-coronavirus-idUSKCN2520AM.

Beckmann, S., Zenker, S. (2013). My place is not your place — different place brand knowledge by different target groups. *Journal of Place Management and Development*, 6(1), 6–17.

Brodowicz, D.P. (2021). Inteligentne rozwiązania w miastach w czasie pandemii — wybrane obszary, funkcje i zastosowania. *E-mentor*, 1(88), 55–63.

Casais, B., Monteiro, P. (2019). Residents' involvement in city brand co-creation and their perceptions of city brand identity: A case study in Porto. *Place Brand. Public Diplomacy*, 15(4), 229–237.

Cheshmehzangi, A. (2020). COVID-19 and household energy implications: What are the main impacts on energy use? *Heliyon*, 6(10), e05202.

Chevtaeva, E. (2021). Coworking and coliving: The attraction for digital nomad tourists. In W. Wörndl, C. Koo, J.L. Stienmetz (eds.), *Information and Communication Technologies in Tourism* (202–209). Cham: Springer.

Ćwiklicki, M. (2020). Metodyka przeglądu zakresu literatury (scoping review). *Munich Personal RePEc Archive*, (104370), 53–68.

Darázs, T., Šalgovičová, J. (2021). Impact of the corona crisis on marketing communication focused on tourism. *Communication Today*, 12(1), 148–160.

Dašić, B., Dašić, D. (2021). Branding of states and nations in (post) COVID-19 era. In *The Sixth International Scientific Conference — Tourism Challenges Amid COVID-19, Thematic Proceedings* (162–179), 3–5.06.2021. Vrnjačka Banja: University of Kragujevac.

De Almeida, M.A., Correia, A., Schneider, D., De Souza, J.M. (2021). COVID-19 as opportunity to test digital nomad lifestyle. In *Proceedings of the 2021 24th IEEE International Conference on Computer Supported Cooperative Work in Design* (1209–1214), 5–7.05.2021. Dalian: IEEE.

Dębkowska, K., Kłosiewicz-Górecka, U., Szymańska, A., Ważniewski, P., Zybertowicz, K. (2020). *Polskie miasta w czasach pandemii*. Warszawa: Polski Instytut Ekonomiczny.

Dimensi Smart Branding. (n.d.). Bantul Smart City. Retrieved May 2, 2022 from https://smartcity.bantulkab.go.id/dimensi/index/981/smart-branding.html.

Dubois, L., Dimanche, D. (2021). The futures of entertainment dependent cities in a post-COVID world. *Journal of Tourism Futures*, 7(3) 364–376.

European Travel Commission. (2021). *Annual Report 2021*. Brussels: European Travel Commission.

Florek, M., Glińska, E., Kowalewska, A. (2009). *Wizerunek miasta — od koncepcji do wdrożenia***.** Warszawa: Wolters Kluwer.

Fuchs, C., Sandoval, M. (2014). Digital workers of the world unite! A framework for critically theorising and analysing digital labour. *Journal for a Global Sustainable Information Society*, 12(2) 486–563.

Glińska, E. (2010). Wizerunek miasta wśród jego mieszkańców a subiektywna jakość życia — koncepcja badań. In A. Noworól (ed.), *Jakość życia a procesy zarządzania rozwojem i funkcjonowaniem organizacji publicznych* (49–67). Kraków: Instytut Spraw Publicznych UJ.

Gosik, B., Żelazna-Jochim, D. (2018). Tworzenie pozytywnego wizerunku miejsca będącego elementem strategii marketingowej miasta — na przykładzie Tomaszowa Mazowieckiego. *ZN WSH Zarządzanie*, (3) 331–342.

Govers, R. (2018). *Imaginative Communities: Admired Cities, Regions and Countries*. Antwerp: Reputo Press.

Gursoy D, Chi, C.G, Dyer, P. (2010). Locals' attitudes toward mass and alternative tourism: The case of Sunshine Coast, Australia. *Journal of Travel Research*, 49(3), 381–394.

Hankinson, G. (2004). Relational network brands: Towards a conceptual model of place brands. *Journal of Vacation Marketing*, 10(2),109–121.

Hassankhani, M., Alidadi, M., Sharifi, A., Azhdari, A. (2021). Smart city and crisis management: Lessons for the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, (18), 7736.

Honey-Rosés, J., Anguelovski, I., Chireh, V.K., Daher, C., Konijnendijk van den Bosch, C., Litt, J.S., Sánchez, U. (2020). The impact of COVID-19 on public space: An early review of the emerging questions–design, perceptions and inequities. *Cities Health*, 5(1), 1–17.

Insch, A., Florek, M. (2008). A great place to live, work and play: Conceptualising place satisfaction in the case of a city's residents. *Journal of Place Management and Development*, 1(2) 138–149.

Kamiński, J. (2011). Istota i etapy marketingu terytorialnego. *Studia Ekonomiczne i Regionalne*, 4(1) 5–16.

Karachalis, N. (2021). Temporary use as a participatory placemaking tool to support cultural initiatives and its connection to city marketing strategies: The case of Athens. *Sustainability*, (13), 1652.

Karakose, T., Yirci, R., Papadakis, S., Ozdemir, T.Y., Demirkol, M., Polat, H. (2021). Science mapping of the global knowledge base on management, leadership, and administration related to COVID-19 for promoting the sustainability of scientific research. *Sustainability*, 13(17), 9631.

Kavaratzis, M., Florek, M. (2021). Special section: The future of place branding. *Place Brand Public Diplomacy*, (17), 63–64.

Kesgin, M., Murthy, R.S., Pohland, L. W. (2019). Residents as destination advocates: The role of attraction familiarity on destination image. *Journal of Hospitality and Tourism*, 2(1), 55–74.

Klage, J.P. (1991). *Corporate Identity im Kreditwesen.* Wiesbaden: Deutscher Universitat Verlag.

Kosieradzki, M. (2016). Informacja źródłem przewag konkurencyjnych w turystyce. *Journal of Tourism and Regional Development*. (5) 61-70.

Kotler, P., Haider, D., Rein, I. (1993). *Marketing Places. Attracting Investment, Industry and Tourism to Cities, States, and Nations*. New York: Maxwell Macmillan.

Kowalczyk-Anioł, J., Pawlusiński, R. (2021). Miasto turystyczne wobec pandemii COVID-19. Pierwsze doświadczenia w świetle literatury przedmiotu. *Annales Universitatis Mariae Curie-Sklodowska, sectio B — Geographia, Geologia, Mineralogia et Petrographia*, (76), 203–222.

Lawton, L.J. (2005). Resident perceptions of tourist attractions on the Gold Coast of Australia. *Journal of Travel Research*, 44(2), 188–200.

Li, J., Nguyen, T.H.H., Coca-Stefaniak, J.A. (2020). Coronavirus impacts on post-pandemic planned travel behaviours. *Annals of Tourism Research*, 86(1), 102964.

Lück, M., Seeler, S. (2021). Understanding domestic tourists to support COVID-19 recovery strategies: The case of Aotearoa New Zealand. *Journal of Responsible Tourism Management*, 1(2), 10–20.

Luo, Y., Chan, R. (2020). Production of coworking spaces: Evidence from Shenzhen, China. *Geoforum*, (110), 97–105.

Łuczak, A. (2002). Wizerunek miasta jako element strategii marketingowej. In T. Markowski (ed.), *Marketing terytorialny* (187–205). Warszawa: KPZK PAN.

Martínez, L., Short, J.R. (2021). The pandemic city: Urban issues in the time of COVID-19. *Sustainability*, (13), 3295.

Merrilees, B., Miller, D., Herington, C. (2009). Antecedents of residents' city brand attitudes. *Journal of Business Research*, 62(3), 362–367.

Michalska-Żyła, A. (2015). Zadowolenie z życia a zaufanie społeczne mieszkańców miast postprzemysłowych. *Acta Universitais Lodziensis, Folia Sociologica*, (52), 147–168.

Ni, P., Kresl, P.K. (2014). *Global Urban Competitiveness Report (2011–2012)*. *City: Who Can Overcome the Financial Tsunami*. Bejijing: Center for City and Competitiveness.

Palmer, A., Koenig-Lewis, N., Medi Jones, L.E. (2013). The effects of residents' social identity and involvement on their advocacy of incoming tourism. *Tourism Management*, (38), 142–151.

Panasiuk, A. (2020). Przyczynek do badań nad wpływem pandemii na stan gospodarki turystycznej. In K. Nessel (ed.), *Turystyka w naukach społecznych* (55–70). Kraków: Instytut Przedsiębiorczości Uniwersytetu Jagiellońskiego.

Setiadi, A., Rudwiarti, L., Priscilia, F., Wardhani, M. (2021). City tourism branding resilience during the COVID-19 pandemic in Yogyakarta, Indonesia. *SPATIUM*, 45(7). DOI: 10.2298/SPAT2145001S.

Siejak, M. (2010). Dla małych marek marketing szeptany. *Marketing w Praktyce*, (11), 77–80.

Stepchenkova, S., Li, X.R. (2014). Destination image: Do top-of-mind associations say it all? *Annals of Tourism Research*, (45), 46–62.

Streimikiene, D., Korneeva, E. (2020). Economic impacts of innovations in tourism marketing. *Terra Economicus*, 18(3), 182–193.

Stylidis, D., Belhassen, Y., Shani A. (2017). Destination image, on-site experience and behavioural intentions: Path analytic validation of a marketing model on domestic tourists. *Current Issues in Tourism*, 20(15), 1653–1670.

Szromnik, A. (2016). *Marketing terytorialny. Miasto i region na rynku*. Warszawa: Wolters Kluwer.

Sztuk, A. (2021). Zmiany w wyborach destynacji turystycznych w okresie pandemii COVID-19. Szansa dla małych miast. In W. Nowak, K. Szalonka (eds.), *Zdrowie i style życia: ekonomiczne, społeczne i zdrowotne skutki pandemii* (155–176). Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.

Thompson, M., Cassidy, L., Prideaux, B., Pabel, A., Anderson, A. (2017). Friends and relatives as a destination information source. *Advances in Hospitality and Leisure*, (13), 111–126.

Wen, J., Kozak, M., Yang, S., Liu, F. (2021). COVID-19: Potential effects on Chinese citizens' lifestyle and travel. *Tourism Review*, 76(1), 74–87.

WHO. (2020). *Global Spending on Health: A World in Transition*. Geneva: World Health Organization.

Zenker, S., Kock, F. (2020). The coronavirus pandemic — a critical discussion of a tourism research agenda. *Tourism Management*, (81), 104–164.

Ekonomia — Wroclaw Economic Review 28/3 (2022)

Wydawnictwo
Uniwersytetu
Wrocławskiego

Wydawnictwo Uniwersytetu Wrocławskiego sp. z o.o.

pl. Uniwersytecki 15
50-137 Wrocław
sekretariat@wuwr.com.pl

wuwr.eu
Facebook/wydawnictwouwr

Ekonomia — Wroclaw Economic Review 28/3 (2022)