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Table of Contents

Classical Economists in the Face of the Old English Poor Law: Prejudice in Scholarly Clothes

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ABSTRACT

Objective: The purpose of this article is to identify the ideological functions of economic theory using the historical case of the opinions of classical economists on the poor law as an example (treating ideological sets of ideas as justifications for the social order).

Research Design & Methods: The research method adopted in this paper is an analysis of the text carried out in the context of its social function.

Findings: The article analyses some moral and social aspects of the emergence of economic theory and shows classical economists' criticisms of the Old Poor Law as rationalisation of social prejudices of upper classes of society. The essence of the discourse of mainstream economists has been to show low moral resources in the working class as the cause of poverty, together with the thesis that social assistance perpetuates this condition. The opposite of these theories were John Barton's arguments, portraying welfare as an investment in the moral resources of the poor, allowing them to return to the ranks of working people. This dispute was forgotten for many years, but seems still relevant in the 21st century context.

Implications/Recommendations: This paper supports the opinions of eminent scholars (like Blaug or Lindert) that the main problems with poverty are essentially the same in our times as in the 19th century. Blaming poor people for their poverty seems as familiar to us today as it was

two hundred years ago. Thus the issue of the welfare state is more moral and political than it is theoretical.

Contribution: This paper is a contribution to the identification of the role of social prejudice in the emergence of economic theory.

Article type: review article.

Keywords: classical economics, Poor Law, work incentives, class prejudices, interest groups.

JEL Classification: B12, N33, P16, H53, J88.

1. Introduction

The issue of public assistance for the poor ranks among the great debates in the history of modern social thought. The emergence of an economic theory that purports to be a science has not delivered a definitive solution to this question. The debate has seen a number of concepts present at the dawn of "scientific" economics repeated again and again. Questions were raised as to whether too generous aid to the poor would hinder economic growth or make beneficiaries lazy and unfit for work. Much thought was also put into the distinction between the deserving and the undeserving poor (Boyer, 2021, pp. 18–24). As Peter H. Lindert pointed out: "The eighteenth and nineteenth centuries had as much trouble with policies toward the poor as we do today. In fact, they had the same troubles, and the same opposing arguments came up" (Lindert, 2007, p. 39). Most classical economists strongly criticised public spending in support of the poor. Their position deserves to be studied as an example of using the authority of science in a matter of public interest. The debate about the Poor Law in the first half of the 19th century eventually led to it being changed. The British Parliament, representing only the propertied classes, passed the new Poor Law of 1834, substantially worsening the situation of the working classes (Boyer, 2021, pp. 37–43; Lindert, 2021, pp. 35–39). The debate about the Old Poor Law was extensive and the voices of economists were among many, but their influence on the fate of the Poor Law was significant (Poynter, 1969; Cowherd, 1977; Himmelfarb, 1985). In this debate, early economic theories were mixed with class prejudices.

In accord with long-standing opinions among the upper classes, in the past, many economists believed that poor people could become richer only if they were willing to work longer or more intensively. In other words, according to these opinions, a lack of willingness to work is a significant contributor to poverty. This assumption still exists today and is quite widely held, despite ample evidence to the contrary (Kim, 1998; Lindert, 2021, pp. 160–171). It seems that economists still struggle to recognise the social functions of their discipline. They, far too often, present the opinions of one side of the argument as the voice of science. Hence, the purpose

of this article is to identify the ideological functions of economic theory using the historical case of poor law reform as an example[1]. This seems important in the context of the issue of social income distribution and income inequality, which is again becoming an important topic of debate in the social sciences. The research method adopted is an analysis of the text with a particular focus on its social function. The main result of these analyses shows some of the views of the early economists to be a rationalisation of attitudes widespread among the upper classes of society. The economic discourse allowed the propertied classes to assert their sense of moral superiority over the working classes. The essence of the discourse of mainstream economists has been to show low moral standards among the working class as the cause of poverty, together with the thesis that social assistance perpetuates this condition. So, the particular social function of classical economics was maintaining the class structure of society. Opposing these voices were John Barton's arguments, portraying public assistance as an investment in the moral development of the poor, allowing them to return to the ranks of working people with stable incomes. This strand of the discussion was disregarded some time ago and forgotten; today it seems the most relevant.

2. Economists and the Poor Law

The Old English Poor Law is usually understood to mean Acts of Parliament from the time of Elizabeth I passed in 1598 and 1601. These were supplemented by various legislation in subsequent centuries, but it was not until the law of 1834, often referred to as the "New Poor Law", that a fundamental change was brought about (Leonard, 1900; Blaug, 1963; Webb & Webb, 1963; Boyer, 1990, 2021; Lindert, 2007, 2021). The Old Poor Law forbade begging and vagrancy, but entitled the poor to receive public assistance at their place of permanent residence, while entrusting the care of the poor to the parishes of the established Church. Each parish established a fund for the poor and overseers to distribute aid and discipline the poor, the operation of the system at parish level was in turn controlled by justices of the peace (Webb & Webb, 1963, pp. 62–65; Slack, 1995, pp. 9–13). The Old English Poor Law represented the realisation of the great intellectual change in opinions about the poor that took place in the 16th century. The ancient Christian tradition mandated giving alms without demanding anything in return. During the Renaissance, however, the tendency to make the poor more productive began to prevail, demanding that they do something useful, banning begging and attempting to discipline them. Reforms in this vein were undertaken especially by municipal authorities, also by some rulers, and were made in both Catholic and Protestant countries (Geremek, 1997;

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[1] By "ideology" I mean a set of ideas justifying social order; it is one of numerous definitions, but I suppose commonly used (cf. Gerring, 1997).

Kahl, 2005). England was the only country to establish poor law standards at the level of national legislation in the early modern era. Because it was a highly decentralised system dependent on local authorities for implementation, the forms of this assistance varied greatly and oftentimes practice deviated from legislation. England thus entered the industrial age with a welfare system providing public assistance to every poor person. Moreover, at the dawn of the industrial revolution, this assistance was intensified. In 1782, an amendment of the Poor Law known as the Gilbert's Act was passed. It allowed parishes to join together to form larger units to help the poor, and facilitated the payment of subsidies to the able-bodied poor (Slack, 1995, pp. 39–40). Another innovation was the so-called Speenhamland system, which was introduced on the initiative of local magistrates in 1797, without separate legislation by the Parliament. The essence of this was to ensure a minimum level of subsistence for all the poor, indexed to the price of bread. It also ensured that the working poor received public assistance (Cowherd, 1977; Boyer, 1990). The Speenhamland system was only applied in certain parts of the country, mainly in the south-east of England, where poverty among farm workers was particularly widespread.

The expansion of benefits under the Poor Law coexisted with the emergence of classical political economy. In the second half of the 18th century, British public opinion[2] took a noticeably kinder stance towards the poor than in earlier decades (Coats, 1960). Early political economy remained critical of the Poor Law, though not hostile. Adam Smith did not *a priori* reject the existence of the Poor Laws, he directly criticised them only once, and only in the context of restrictions on the movement of workers. Under British legislation, only those settled in a particular parish were entitled to assistance. The repatriation of unwanted migrants to their home parish was a significant practical problem associated with the operation of the Poor Law in the 17th and 18th centuries. Smith's criticism centred on the fact that impeding workforce mobility leads to unwelcome wage differentials, leading to inefficient use of labour resources. In places where wages were locally too high, a reduction in wages could lead to an increase in the amount of work done, so harmonising wage rates throughout the country could increase both employment and production (Smith, 1981, pp. 152–154). Indeed, in Smith's economics, the optimal use of resources requires full resource mobility and price flexibility. Across the economy, profit rates and wage rates for work of the same level of difficulty and inconvenience then balance out. Smith explicitly criticised only those effects of the Poor Law that led to a distortion of the price mechanism. Perhaps he expected that the undisturbed operation of market forces would, over time, lead to a solution to involuntary unemployment and render assistance to the able-bodied poor unnecessary. Presumably, in keeping with the humanitarian beliefs of his time, he was

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[2] As a matter of fact it was the opinion of wealthy and educated classes of society.

not averse to assisting the poor unable to work. This seems to be the best possible explanation of Smith's position on the Poor Law (cf. Coats, 1960, p. 49). Whether the author of *The Wealth of Nations* was right about the facts is another matter, most likely he was exaggerating the limitations of labour mobility (cf. Hollander, 1976, pp. 259–262). While Smith was still alive, his position was criticised by advocates of the Poor Law from church circles (Poynter, 1969, pp. 5–6). They pointed out that the settlement regulations were enforced to a limited extent, as it was costly to send unwanted newcomers back to the appropriate parish and local officials were not very zealous in their work. Most likely, restrictions on labour mobility were of little importance in the economic life of late 18th century Britain.

Although Smith did not completely reject the Poor Laws, this can easily be done on the basis of Smithian economics. In line with Smith's argument, capitalists' savings are a source of capital, both constant and variable. The latter was understood as the stock of goods consumed by workers. In other words, in Smith's economics, the demand for labour depends on the amount of capital accumulated by capitalists. Hence, it is in the interests of the workers themselves that nothing should prevent the capitalists from accumulating profits, which are the source of the demand for labour. This doctrine was clearly articulated by Smith (Smith, 1981, pp. 86–87, 337–339). It is therefore legitimate to conclude that any outflows from the profit fund for purposes other than capital formation will reduce the demand for labour and, consequently, the income of the workers themselves as a class. Such conclusions can legitimately be drawn from Smithian economics, and indeed there has been no shortage of its proponents who have done so (cf. Townsend, 1971, pp. 20–23). However, it was Ricardian economics that provided the strongest arguments against the rights of the poor.

In the first decades of the 19th century, the dominant type of economic theory in British thought was Ricardian economics, which for a time dominated the thinking of British elites (Blaug, 1973). At its core was the belief that declining incomes in agriculture must lead to inevitable stagnation. The notion that food production capacity alone sets absolute limits to economic growth is absolutely correct, on a global scale it always remains true. However, the proponents of Ricardian economics were convinced that reaching these limits in their time was very close and could be achieved in their lifetime as a result of unstoppable population growth. The source of this belief was that their imagination was captured by the Malthusian theory of population. As Mark Blaug says: "To a generation drunk on Malthusian wine, the population argument seemed irrefutable" (Blaug, 1963, p. 153). It was fully accepted by Ricardo, who argued that it was not possible to sustainably increase wages beyond the natural level, since any such increase would multiply the number of surviving children of the working classes, which in turn would increase the supply of labour and inevitably bring wages down to the natural level (Ricardo, 1980,

pp. 94–96). The occupation of further parcels of land of decreasing fertility leads, in Ricardian theory, to an increase in the annuity from previously developed land. The share of annuities accruing to landowners in social income continues to rise while capitalist profits decline (Ricardo, 1980, pp. 112–127). As a result, in long-run equilibrium, wages remain at a level that only keeps workers alive, profits decline until new net investment ceases and landowners become the beneficiaries of social income distribution. The model leading to these conclusions was called the canonical model of classical economics by Paul Samuelson, attributing it to all classical economists (Samuelson, 1978). As a matter of fact, reasoning of this type can be found in the writings of all classical economists. However, the peculiarity of Ricardian economics was that its proponents comprehended the development of the market economy as a great race between declining returns in agriculture and technical progress which, by increasing productivity, diminished the prospect of long-term stagnation.

The concept of a natural wage equal to the cost of physical survival and reproduction of the workforce is found in Adam Smith, who, in turn, took it from Richard Cantillon (Smith, 1981, pp. 85–86). After all, Smith had not one concept of wages, but several. In addition to the argument about wage fluctuations around the subsistence level, we also find comments about the long-run tendency for real wages to rise and an argument about productivity growth as a result of rising wages, which can be seen as a precursor to the efficiency wage theory. Another strand in Smith's wage theory, on the other hand, was the idea of employers colluding against workers to minimise wages. Insofar as the consistent theory of natural wages prevailed within Ricardian economics, it happened under the influence of Malthus. The first version of *An Essay on the Principle of Population* in 1798 was a consistent theory of the population mechanism as an inevitable law of nature. People succumb to their natural urges and produce offspring even if there is no livelihood for new generations. The ensuing vice and misery as a result of over-population causes the population to fall below the limits of subsistence, with the result that the growth phase repeats itself until the next overpopulation phase occurs. As a result, humanity is doomed to perpetual fluctuations in numbers, with labour wages constantly hovering around subsistence levels (Malthus, 1798, pp. 13–15). In reference to the population cycle understood in this way, Malthus used the phrase "necessary oscillation" (Malthus, 1798, p. 153). In the first version of *Essay*, the possible beginning of the sequence of population oscillations looked very unclear. The second version of Malthus's *Essay* was, in fact, a completely new book, while the four subsequent editions published during the author's lifetime contained some minor alterations. In his "second Essay", Malthus explicitly allowed for the possibility that moral restraint was a factor that could overcome the inexorable mechanisms of the Malthusian cycle. At that point, Malthus went from being

a naturalist to a moralist, arguing that the working classes could improve their situation by reducing childbearing through late marriage and avoiding extramarital sexual relations (Malthus, 1803, pp. 493–502). Presenting the question of working class income as a function of their moral condition was in line with the traditional prejudices that the enlightened portion of the upper classes had held for centuries. The portrayal of the lower classes (as well as non-European peoples) as "lazy" and incapable of rational action was an established tradition in European thought. It is worth noting that Smith avoided such opinions and spoke respectfully of workers. Malthus, on the other hand, rekindled the discourse about the "lazy" poor, adding a more scholarly justification for it. In fact, it was also a justification of the moral and political position of the upper class.

3. The Issue of the Poor as a Moral Problem

Malthus's belief that reducing fertility was the best way to improve the situation of the working poor placed their moral values at the centre of the analysis. In this respect, the propertied classes tended to have the worst possible opinion of people from the lower classes. A common view in pre-classical economic literature was that too high wages make workers lazy (Johnson, 1937, pp. 287–288). The positions of Arthur Young, a contemporary of Smith, were representative of this. Young, author of extensive studies of English agriculture, maintained that it was not worth paying farm workers more than enough to survive, as too high wages took away their motivation to work (Young, 1771, pp. 319–320). Another influential author, Joseph Townsend, argued that only the threat of starvation was effective in encouraging the poor to work (Townsend, 1971, p. 23). He added at the same time that it made no sense to pay rates higher than the subsistence rate, as workers would waste them in alehouses, and a drunken worker could not be effective (Townsend, 1971, p. 30). There were also repeated complaints in 17th and 18th century literature about the demotivating effect of public assistance for the poor. All these themes can be found in Malthus, who, in keeping with the sentiment of the age, demonstrated that the hope of an allowance made workers lazy and reckless, and had a decisive influence on their unwise reproductive decisions. The solution to the problems associated with the poor was supposed to be the abolition of the (Old) Poor Law, especially the dependence of assistance on residence in the native parish. Agricultural workers looking for work where there is demand for it will improve their situation, and they will also be more likely to take steps to protect themselves against mishaps and illness. Instead, workhouses should be maintained for the extremely disadvantaged, to which all would be admitted, but they would have to endure hard living conditions and contribute as much work as possible (Malthus, 1798, pp. 95–99). This is how Malthus proposed to solve the problem of the poor in his first *Essay*. In subsequent editions of *An Essay on the Principle of Population*, Malthus consistently

called for the abolition of the Poor Law, this was to be done in such a way that once the relevant legislation had been passed by Parliament, those born after the set date were to be deprived of their right to assistance, while the previous beneficiaries were to retain it for life (Malthus, 1803, p. 538). In this way, public aid to the working poor was to be gradually phased out. Add to this the fact that in the first version of *Essay*, the author explicitly urged his readers to show contempt for the poor, since the shame of their own poverty was supposed to motivate the working poor to take action to improve their lot (Malthus, 1798, p. 85).

Ricardo took up Malthus's reasoning on the Poor Law, ensuring that it was the author of *An Essay on the Principle of Population* who demonstrated its deleterious effect on social well-being (Ricardo, 1980, p. 106). According to Ricardo, maintaining the Poor Law in a society where the population was increasing and the cost of production expressed in terms of corn was still rising, must eventually lead to a halt in economic growth, as most of the net income would be spent on benefits. Ricardo asserted that this reasoning was as certain as natural laws: "The principle of gravitation is not more certain than the tendency of such laws to change health and power into misery and weakness" (Ricardo, 1980, p. 108). In agreement with Malthus, Ricardo recommended the gradual abolition of the allowance system. He similarly believed that this would have a salubrious effect on the working classes. Namely, the revocation of public assistance entitlements was aimed at "teaching them that they must look not to systematic or casual charity, but to their own exertions for support, that prudence and forethought are neither unnecessary nor unprofitable virtues" (Ricardo, 1980, p. 107). Ricardo's successors applied an even more intrusive and superior theory towards the lower classes.

After the death of Ricardo, the most influential economist of the next generation was Nassau William Senior, the first Professor of Economics at the University of Oxford (Bowley, 2010). Senior was extremely sceptical of Malthus's theory of population, for he understood that developments had proven contrary to the strongest predictions of the Malthusian theory. In the third decade of the 19th century it became gradually accepted that the increase in actual wages did not lead to a significant increase in fertility among the working class. This was understood by Malthus himself, who acknowledged in his last works that an increase in workers' incomes could, under certain conditions, lead to a more frugal model of procreation. The *ad hoc* thesis he adopted was that such behaviour was encouraged by a constitutional and liberal political system (Malthus, 1836, pp. 226–228). Malthus, while retreating from the stronger version of his theory, did not, however, disavow the political conclusions he had drawn from it and, even in the last (sixth) edition of his *Essay*, invariably called for the repeal of the Poor Law. In his Oxford lectures, Senior made it clear that the Malthusian "trend" of exponential population growth was only a theoretical possibility which had never been and was not being realised

(Senior, 1828, pp. 13–14). He also noted that in an affluent society, people limit their childbearing by delaying entry into marriage as they seek to prevent a reduction in their own consumption (Senior, 1828, pp. 25–26). Despite the abandonment of the population bogeyman, Senior initially also supported the complete abolition of benefits for the able-bodied poor. His views on the issue of relief for the poor were contained in his 1830 pamphlet *A Letter to Lord Howick, on a Legal Provisions to the Irish Poor*, which also addressed other Irish issues. On this occasion, Senior made clear his thoughts about helping the working poor in general. The essence of Senior's argument is that excessively generous benefits for the working poor destroy the virtues that poor people need in order to be able to support themselves through waged work (Senior, 1831, pp. 24–25). In other words, Senior, in vague terms, but quite openly, returned to the thesis that only the fear of poverty would encourage workers to work productively. The Oxford professor's arguments reinforced the old prejudices of the upper classes.

4. John Barton – Forgotten Pioneer of the Welfare State

Among classical economists, the most prominent defender of the Old Poor Law was John Barton, who also remains the most underrated of this group. He is generally overlooked in works on the Malthusian controversy or the history of social welfare; historians of economic thought have been somewhat kinder to him. Barton was the author who prompted Ricardo to change his views on the impact of technological progress on employment and wages and, consequently, to include in the third edition of *Principles* the famous chapter "On Machinery" (Ricardo, 1980, pp. 386–397). Unfortunately, criticism from Barton did not induce Ricardo to modify his views on the Poor Law. This was to the clear detriment of the development of both economic theory and the political debate on social policy. Indeed, in his pamphlets Barton laid out an evocative refutation of the Malthusian theory of population and the consequent theory of wages, leading by a simple route to a rejection of the political conclusions drawn by Malthus, Ricardo and James Mill. It seems that Barton was the first to claim that the population growth that took place in the UK in the second decade of the 19th century was due to an increase in life expectancy, rather than an increase in the birth rate (Barton, 1817). Disproving influential economic theory with empirics was a major challenge for political economists. This could not have been overlooked by Malthus, who, after writing the first version of his treatise, had spent five years doing research to find data to substantiate his theory. In his 1820 economics textbook, he retreated from the thesis of the autonomous operation of the "Principle of Population", acknowledging that sometimes an increase in wealth could lead to a decrease in the birth rate. In doing so, however, he still had a case against the Poor Law relating to the moral resources of the working classes. Since poor people lack industriousness, prudence and entre-

preneurship, only taking away public assistance will force them to be active and work effectively. Barton was the first economics writer to strongly oppose such judgements; moreover, he was successful in convincing some.

In an 1817 booklet entitled *Observations on the Circumstances Which Influence the Condition of the Labouring Classes of Society*, Barton challenged Malthus's theory of population on empirical grounds. Barton's main argument was that the population growth seen in the UK was due to increased life expectancy, not to an increase in the birth rate under the influence of rising wages (Barton, 1817, pp. 22–25). In the author's view, this was sufficient to reject the natural wage theory as it was conceived by Malthus (and by Ricardo whose *Principles* were unlikely to have been known to Barton at the time of writing the aforementioned pamphlet). It is worth adding that Barton's argument was well-founded but somewhat exaggerated. Human life expectancy was clearly increasing in the UK during the first two decades of the 19th century, yet the effect described by Malthus was also occurring. Another problem was that increases in life expectancy had stopped in the following decades, especially in great cities (cf. Szreter & Mooney, 1998). Indeed, careful demographic and historical research has shown that in the first decades of the 19th century there was still a positive correlation between allowances for the poor and birth rates (Boyer, 1990, pp. 150–172).

In his 1820 treatise *An Inquiry into the Progressive Depreciation of Agricultural Labour in Modern Times*, Barton firmly rejected the central argument of Malthus, Ricardo and Senior regarding the demotivating effects of the Poor Law. In Barton's view, the abolition of the Poor Law would significantly worsen the situation of the working classes, without any beneficial effects. Indeed, the prospect of a complete lack of assistance cannot motivate people to work and act more rationally. On the contrary, neither the experience of poverty nor the threat of such a condition makes a person more rational, foresighted and enterprising. According to Barton: "The pressure of want debases, stupefies and enfeebles, abates the quickness of the feelings, and relaxes the tone of the understanding. That comprehensiveness of mind which sacrifices present enjoyment to attain a distant good, dies under the harsh and stormy aspect of severe penury" (Barton, 1820, p. 31). In particular, this applies to the key issue, for Malthus and Ricardo, of working class reproduction. For a desperate man who sees no hope of improving his lot will not subordinate his natural instincts to calculation. On the contrary, poverty and lack of assistance result in an individual reverting to instinctive behaviour. It is therefore difficult to expect people living in poverty to restrain their sex drive (Barton, 1820, pp. 31–32). After all, coercion and brutal economic incentives cannot change human nature: "Schemes for terrifying men into prudence appear to me to be founded on a false view of human nature" (Barton, 1820, p. 88). In his claims, a British landlord from Sussex referred to some facts that can, from today's perspective, be considered an interesting natural experi-

ment. They concerned the poor belonging to the religious group from which Barton himself came, this was the Society of Friends (commonly known as the Quakers). Barton's Quaker affiliation is a somewhat complicated issue. His parents and wife were Quakers. However, he eventually left the Society of Friends. The reason for the dispute with the Quakers was Barton's payment of tithes to the official Church of England (Sotiroff, 1952, p. 88). When writing his 1820 pamphlet, Barton was still officially a Quaker. According to Barton, poverty amongst Quakers was much rarer than in British society in general. At the same time, the Quakers provided more careful care for the poor than the public authorities, not allowing them to be subjected to various humiliating official procedures. Despite clearly more generous aid to the poor, Quaker fertility rates were apparently lower than the average for British society (Barton, 1820, p. 36). There is no reason to doubt the reliability of Barton's observations, one can only wonder what other reasons made Quakers stand out for their wealth in Anglo-Saxon societies. Two of these can probably be identified – the ethos of work, which was particularly strong among Quakers, and informal business support within the small religious group.

Barton's argument forms a structure that can be called an anthropological case for an active pro-poor policy, or in today's terms for the welfare state. This leads to the understanding that solidarity and hope provide better motivation for work, entrepreneurship, and foresight than coercion and the threat of falling into poverty. According to Barton, fear may prevent people from committing crimes, but calculation and rational action are made possible by hope: "Prudence, with its kindred virtues, industry, frugality, and temperance, come of the family of hope, and not of fear" (Barton, 1820, p. 88). The essence of the difference between Barton and Malthus or Senior seems to reside in the fact that he regarded social assistance as an investment in the moral capital of the poor, whereas his adversaries believed that low moral standards were the cause of poverty and that social assistance made it impossible to develop them, only the threat of starvation could do so. Barton's views have a clear parallel in today's disputes about the incentive effects of social spending. On the one hand, "libertarians" still have a strong influence claiming that social spending discourages the poor from working and moral behaviour, while encouraging harmful behaviour (Murray, 1984). On the other hand, we have more and more evidence that a well-designed welfare state can keep the population in a state of high labour force participation and sustain its productive capacity (Lindert, 2007, 2021). The fact that both positions persist in the public debate more than two hundred years after the publication of Barton's pamphlets seems to indicate that the dispute over aid to the poor is one of values rather than facts.

Barton's pamphlets have not gone unnoticed by the political economics community. An author who switched to the side of the defenders of the Poor Law was James R. McCulloch, regarded as the leader of the Ricardians after Ricardo's

death. McCulloch was an influential man, the first Professor of Economics at the University of London and also the author of much of the writing on economic issues in the *Edinburgh Review*, expressing the opinion of the mainstream Wigs at the time. Initially McCulloch shared the views of Malthus and Ricardo on the issue of the rights of the poor, but around 1826 he clearly changed his approach to the problem (O'Brien, 2010, pp. 319–331). In an extensive commentary on the Poor Law issue in the *Edinburgh Review* of 1828, McCulloch concluded that their abolition was not necessary, it was possible to both balance the public finances and maintain an adequate supply of labour without abolishing them (McCulloch, 1828, pp. 325–326). Crucial to McCulloch's new position was the acknowledgement that rational and responsible behaviour is only possible in people who are provided with "tolerably comfortable circumstances" (McCulloch, 1828, p. 316). In contrast, the lower someone stands in the social hierarchy, the less calculation and foresight can be expected of them, including in the sphere of reproductive behaviour (McCulloch, 1828, p. 317).

5. Conclusions

Criticism of the Poor Law by classical economists consists of three main arguments. The first refers to the settlement provisions and points to restrictions on workforce mobility as a distorting factor in the price mechanism. The second is to recognise spending under the Poor Law as a reduction in funds for the employment of the workforce and, as a result, the income of the working people. The third refers to the thesis of the demotivating effects of benefits, which undermine the will to work, entrepreneurship, thrift and frugality in the working class. The first two derive from Smithian economics, the third is present in Malthus and proponents of Ricardian economics. The increasing use of this third argument demonstrates the clear penetration of upper class prejudices into the arguments of political economists. The contrast between Smith's view of workers and that of Malthus and Senior (Ricardo was more cautious in his judgement) is telling. Smith saw workers as fundamentally rational beings, yet with insufficient knowledge. Instead, Malthus, James Mill and Senior saw them as irrational and easily corrupted. With hindsight going back almost two centuries, we can say that both of these positions were based on equally amateur psychology. Smith, arguably, had too much confidence in human rationality, most Ricardians succumbed to class prejudices. Against this backdrop, one has to appreciate the reasoning of Barton who, referring to a still slim set of facts, came to a different conclusion, aided by slightly better psychological intuitions. Barton's speech was also not without influence on the debate among economists, influencing McCulloch and, perhaps, Senior. Although the classical economists abandoned the idea of completely abolishing the Poor Law,

they certainly favoured drastic reductions in funds to help the poorest members of society.

The New Poor Law of 1834 was passed after decades of public debate. Classical economists played an important role, although we cannot say that it was a decisive one. Poynter, the author of a monograph on this debate, chose not to give a clear conclusion on who contributed most to the final shape of this act. He emphasised the influence of Malthus and Bentham, but also the defenders of the rights of the poor from church circles (Poynter, 1969, pp. 324–329). Social policy historian George Boyer portrayed the 1834 reform as the result of a change in the attitudes of the large landowners controlling Parliament, with their influence outweighing the interests of tenant farmers and smaller landowners. In fact, most farmers were in favour of maintaining the Old Poor Law, as it ensured a stable supply of labour while minimising its costs. This is because, during periods of farm work, agricultural workers lived off their wages; during periods when demand for workers in the fields was low, their livelihood was ensured through benefits. However, the big landlords feared that increased spending under the Old Poor Law would reduce their incomes and reduce the value of their estates. Hence, they decided on the reform motivated by exaggerated expectations of its future effects (Boyer, 1990, pp. 265–267). It can therefore be concluded that the voices of classical economists influenced the Parliament's decision by fuelling the concerns of the major landowners who controlled the UK Parliament at the time. Boyer's arguments seem to model the social situation well, as well as providing a better understanding of the role of ideas in the debate on the reform of the Poor Law. Ideas are of great importance in the history of mankind, for they set the boundaries of what we are able to imagine, but their impact only becomes apparent when they are coupled with the interests of important social groups.

The 1834 reform changed British social policy for many years. The trend towards increased social spending resumed in the early 20th century. This time, however, state spending focused on supporting those with employment and stable incomes, with less care for the poor. The bad reputation of the Old Poor Law lasted even longer. It was not until Blaug's article which inspired further research, that these opinions were revised (Blaug, 1963). Most of the revisionist views have been confirmed (Boyer, 1990). The bad reputation of the Old Poor Law has resulted in the most interesting part of the controversy being completely forgotten. Barton's concept of social welfare as an investment in the productive capacities and moral resources of the poor is a precursor to the welfare state, and, it seems, enduringly relevant.

Conflict of Interest

The author declares no conflict of interest.

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The Cashless Economy from the Perspective of SMEs: Review of Research and Recommended Directions for Future Studies

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A B S T R A C T

Objective: The aim of the paper is to provide a critical evaluation of empirical studies on cashless payments and the cashless economy from the perspective of small and medium-sized private enterprises and to identify research gaps in this area.

Research Design & Methods: The article is a review of empirical research on the cashless economy from the perspective of enterprises. The review relates to theory, methodology and contexts applied in studies published over a period of the last 15 years. It also includes the analysis and synthesis of findings from the studies relating to individual countries.

Findings: Future research should concentrate on several areas, including: identification of the opportunities and threats related to the perspective of an entirely cashless economy for enterprises of different scales of activity and representing different sectors, identification of the barriers and drivers related to the cashless economy from a businesses' perspective and defining the potential strengths and weaknesses of fully cashless enterprises in the contemporary economy.

Implications/Recommendations: Filling the identified research gaps requires a holistic approach to payments in enterprises. It requires collection and analysis of data covering businesses representing different scales and industries, and using both quantitative and qualitative methods.
Contribution: The article provides a synthesis of current knowledge, identifies research gaps, and suggests directions for future research in the field of cashless economy.
Article type: review article.
Keywords: cashless economy, payments, enterprises, SMEs.
JEL Classification: D22, E42, G20, O33.

1. Introduction

The cashless economy refers to a situation in an economy where all, or almost all, payments are made without physical cash but by transfer of deposited money between payment accounts, or with e-money. The transition towards the cashless economy can be observed worldwide and is driven by digitalisation, financial inclusion, and changes in payment habits. The concept of the cashless economy has become a topic of special concern due to a noticeable decrease in cash usage for payments in many countries around the world.

The factors accelerating or constraining transformation to the cashless economy may be divided into several groups: institutional, market, technological and social. They concern different economic agents, including consumers and their households, enterprises, financial institutions, public institutions and the state.

The cashless economy is an idea which has not yet been fully implemented in any country, but the contemporary conditions and available payment systems enable enterprises in most advanced and many emerging economies to be fully cashless. Moreover, the relationships of enterprises with counterparts and employees affect the latter in the area of payments. These issues have not been sufficiently explored in the literature and in empirical studies.

The aim of this paper is to provide a critical evaluation of empirical studies on cashless payments and the cashless economy from the perspective of small and medium-sized enterprises (SMEs) and to identify research gaps in this area. The article is designed to provide a synthesis of current knowledge, identify research gaps, and suggest directions for future research in the field of cashless economy. It uses empirical articles searched for by the keywords "cashless economy" and "payments in SMEs" in databases such as: Scopus, Web of Science, Science Direct, Springer Link and Google Scholar. The review refers to theory, methodology and contexts applied in studies published over a period spanning the last 15 years.

The second part presents the concept of the cashless economy and sheds some light on the process of achieving it. The third section examines empirical studies on

payments from the perspective of enterprises with a focus on the cashless economy. It considers the scope of the research, as well as the industrial and geographical dimensions. It also identifies the analytical areas of the research and pinpoints the key theories and methodologies that have been examined. Additionally, it includes an analysis of the findings with regard to the adoption of cashless payments by enterprises, the interactions between merchants and consumers, the costs and benefits of cashless activity, and public policy in this area. The fourth part of the paper identifies the gaps in knowledge about the cashless economy from the perspective of enterprises, especially small and medium-sized ones. It also provides suggestions as to where future research may be usefully directed in order to acquire knowledge about the cashless economy from the perspective of businesses. These suggestions are focused on two levels: microeconomic (payments in a given enterprise) and macroeconomic (payments throughout the whole economy).

2. The Idea of the Cashless Economy and the Transition towards It

The term "cashless economy" is not clearly defined. Its meaning depends on the perspective from which it is analysed. From a macroeconomic perspective, it characterises a situation in which there is no physical means of payment or government-issued money in the form of coins or banknotes (Marszałek & Szarzec, 2022).

At the level of individual entities, achieving the level of complete cashlessness is possible in a situation where an economy combines the use of cash and non-cash payments. Due to the microeconomic perspective adopted in this study, i.e., from the point of view of enterprises, the cashless economy is identified with the situation in an economy where all, or almost all, payments are made without physical cash but by transfer of deposit money between payment accounts or by e-money. This is consistent with Maurya's (2019) definition, who argued that the cashless economy is characterised by an exchange of funds by cheque, debit or credit cards, or by electronic methods, rather than through the use of cash. The same is true for Ejiofor and Rasaki (2012), Achor and Robert (2012), and Yaqub *et al*. (2013), who claimed that it means an economy where cash-based purchases and transactions are fewer in number than operations carried out using electronic means of payment. Such an approach is also justified by the fact that the transition to an economy without physical currency is a process that is difficult to grasp, as there is no precise threshold at which cash is so insignificant that the economy can be considered cashless.

In the context of the cashless economy as a process, the term "de-cashing" is used. It is defined as the gradual phasing out of physical currency from circulation and its replacement with convertible deposits (Kireyev, 2017). De-cashing is driven by payment innovations but, as coins and banknotes are a payment means used in the shadow economy and also a store of value, monetary authorities in many countries use administrative instruments to achieve such an aim, including: abolishing

large denomination banknotes, imposing ceilings or charges on cash transactions, or introducing declaration requirements on the transport of cash.

The transition to a cashless economy can be achieved by decentralised market--driven forces or centralised state-driven actions. In fact, many countries use a combination of both. In addition, government initiatives can restrict the circulation of banknotes and thus indirectly affect the volume of cashless transactions or, in contrast, prohibit the non-acceptance of cash in transactions.

The cashless economy has important positive implications for society and the economy. They include the reduction in the shadow economy due to greater transparency of payment operations or a reduction in transaction costs (Raya & Vargas, 2022). There are benefits from less use of cash since it discourages tax evasion, illegal immigration and crime, and it enables governments and central banks to handle economic crises more effectively. On the other hand, there is a risk of financial exclusion of some groups (Rogoff, 2017). From the perspective of a single company, a cashless economy may have different advantages and disadvantages depending on its size, sector, and business model. The positive and negative aspects of cashless payments in various areas of activity are also determined by the environment in which the enterprise operates (e.g. the level of development of the economy and its openness, or customers' payment choices). From the perspective of small and medium-sized enterprises, the ability to make cash payments allows for greater flexibility in servicing customers and contractors in one-off transactions. In addition, for small entities operating in the food and catering industry in particular, the inability to pay in cash can be a significant obstacle to trading on agricultural and commodity exchanges, bazaars and markets.

3. Review of Empirical Studies on Payments in Enterprises

3.1. General Remarks

Most studies examining methods of payment are customer-centric. Papers that concentrate on consumer payment habits and the determinants of their choice include, for example: (Jonker, 2007; Borzekowski, Kiser & Ahmed, 2008; Chen, 2008; Klee, 2008; Ching & Hayashi, 2010; Simon, Smith & West, 2010; Kosse, 2013; Harasim, 2015; Schuh & Stavins, 2016; van der Cruijsen & van der Horst, 2016; Liu, Ben & Zhang, 2019; Karjaluoto *et al*., 2020; Klimontowicz & Harasim, 2022). Studies exploring the impact of the COVID-19 pandemic on consumer payment behaviour include: (Ardizzi, Nobili & Rocco, 2020; Auer, Cornelli & Frost, 2020; Jonker *et al*., 2020; Kim, Kumar & O'Brien, 2020; Akana, 2021; Kotkowski & Polasik, 2021; Kulisz, Bojanowska & Toborek, 2021; Rafdinal & Senalasari, 2021; Wiśniewski *et al*., 2021).

The perspective of business is also evident in the research. Empirical studies on payments in small and medium-sized enterprises concentrate on the following areas:
– the adoption of cashless payments by micro, small, and medium-sized enterprises (MSMEs),
– the interactions between retailers and consumers,
– the costs and benefits of different payment methods,
– cash and cashless policy implications.
The review of research papers will take into consideration the division into the areas listed above.

3.2. Adoption of Cashless Payments by Enterprises

Most articles considering the perspective of businesses emphasise retailers' adoption of cashless payments. Generally, all of them involve C2B (consumer-to--business) payments, and few of them include B2B (business-to-business) payments. Table A.1 in the Appendix presents selected empirical papers based on various data, methods, approaches and theories. They have been grouped into papers referring to either developed or emerging economies.

Mallat and Tuunainen (2008) examined the adoption of m-payments by Finnish retailers and found that the main drivers of their adoption are related to ways of increasing sales or reducing the costs of payment processing. The complexity of the systems, unfavourable revenue sharing models, lack of critical mass, and lack of standardisation are barriers to their adoption.

The findings of Petrova and Wang (2013) indicate that retailer demand for m-payment in New Zealand (Auckland) is motivated mainly by two factors. The first comes from the customer and refers to the desire for a convenient way to pay using mobile technology. The second comes from the retailer and emphasises the perceived efficiency of m-payment, leading to an increase in revenue. The identified challenges to m-payment adoption include: competition with already established payment technologies and uncertainty about comparative advantages arising from adoption of mobile payments.

Research conducted among businesses representing different sectors in Spain by Cabanillas, Slade and Dwivedi (2016) shows that their poor knowledge about m-payments and the lack of critical mass are the dominant barriers to retailers' adoption of mobile payment systems.

Fung *et al.* (2018) used data for SMEs in Canada and provided estimates for the level of the merchant service charges that would leave retailers indifferent to accepting cash or credit card payment at the point of sale. They found that cash is almost universally accepted by small and medium-sized enterprises, while credit cards are not.

Research conducted by Górka (2012) among enterprises operating in Poland discovered barriers to the development of non-cash transactions in the form of a high level of costs associated with the acceptance of payment cards. It also revealed other factors that affect the attachment of Polish entrepreneurs, especially small ones, to cash, such as: the preferences of contractors and employees, delays in the settlement of card transactions, the lack of conviction of most business owners about the impact of their acceptance on an increase in sales volume, and the related lack of tangible benefits of accepting card transactions.

The results of research conducted by Polasik and Marzec (2018) among trading and service entities in Poland indicated that a larger scale of a company's operations, measured by the number of employees and branches, as well as the organisation within the trading network, have a very strong positive correlation with the likelihood of accepting payment cards. The study showed that potential consumer demand was an important factor increasing the likelihood of card acceptance by the entity. This confirmed the impact of an indirect network effect on the participants in the payment card market.

Szalacha-Jarmużek, Polasik and Jakubowska (2022) explored the attitudes and perceptions towards cashless payments among retailers in Poland as an expression of greater social change. They found that the decisions of SME owners are not based solely on an economic cost-benefit calculation. Social factors such as norms, values and grand narratives (e.g., modernity, innovation, entrepreneurship) play a significant role in a subjective understanding of the possibilities and limitations of the cashless economy. They also influence the individual choices of companies in terms of accepting card payments.

The above studies referred to developed countries. Adoption of cashless payments by enterprises has also been the subject of research in emerging economies. Quantitative research by Loke (2007) on traders in Malaysia enabled factors to be defined that determine a retailer's decision to participate in card schemes. According to the study, the probability of accepting card payments is positively correlated with: the number of cards held by the merchant, the total value of transactions, retailers' perceptions of customers' use of cards, and competitors' acceptance of card payments, while it is negatively correlated with the age of the merchant. The study concluded that customer demand was the most important factor determining a retailer's decision to participate in card schemes, while the traders' desire to increase sales associated with accepting card payments was the second most important factor.

13 years later, Moghavvemi *et al*. (2020) examined motivational drivers, barriers and challenges in the context of the adoption and implementation of m-payment systems by retailers in Malaysia. The results of their study confirmed that the factors motivating retailers to adopt m-payment include: the relative advantage of

decreasing payment processing time and fees, convenience and payment security features. The factors discouraging retailers relate to technological incompatibility, complexity, the cost of investment and the lack of critical mass.

A study by Citradika, Atahau and Satrio (2019), based on a quantitative research method, revealed that the adoption of non-cash payments by traders (batik sector) in Indonesia depended on their financial literacy. In their opinion, financial literacy has a positive influence on attitudes to non-cash transaction, which, in turn, have a positive influence on the intention to accept non-cash transactions. They also found that repetitive behaviour, which is driven by the motive to maintain satisfactory business relations when counterparties require cashless payments, has a positive impact on non-cash transaction habits.

In-depth observations carried out by Chairunnisa, Alfina and Yasmin (2020) in another region of Indonesia and in another sector, concentrated on the readiness of MSMEs to adopt digital payment technology to support the trend towards a cashless society. The results showed that adopting digital payment technology is affected by culture, social influence and acceptance of technology.

A study by Yeboah *et al*. (2020), based on a qualitative approach, concentrated on the role of trust in m-payment technology adoption in Ghana. The authors found that trust in both the technology and service provider are more important for retailers than the perceived usefulness or ease of use.

Kwabena *et al*. (2021) distinguished three groups of determinants that have a statistically significant effect on the adoption of mobile payment systems by small and medium-sized enterprises in Ghana. These include technological factors (relative advantage and compatibility), organisational factors (top management support and employee readiness), and environmental factors (social influence and competitive pressure).

Abebe and Lessa (2020) explored the factors that positively and significantly affect retailers' adoption of mobile payments in Ethiopia, and found that these mainly include: relative advantage, ease of use, usefulness, attitude, trust, risk/security and cost. Compatibility was found not to be significant for traders' adoption of mobile payment systems in the Ethiopian context.

In the study on merchant's perceptions Sinha and Singh (2022) included TAM-based psychological factors, and integrated them with variables concerning perceived experience, perceived cost, perceived trust and word of mouth learning. They found that Indian merchants' intentions to use mobile payment services are mostly influenced by perceived experience, followed by word-of-mouth learning.

The findings arising from the above studies vary due to the different locations, scope and time period of the research. However, they make it possible to define the factors which induce or discourage the adoption by retailers of particular methods of receiving payments in certain conditions. The main drivers for adoption of non-cash

payment relate to expectations of sales and revenue growth, as well as a predicted reduction in the time and costs of payment processing, and payment security issues. The perception of the efficiency of non-cash payments depends on the scale of the company's operations. In developing economies, acceptance of non-cash payments may depend on trust in both technology and service providers.

Potential barriers to the adoption of non-cash payments by retailers (including mobile payments) may relate to technological, economic and social factors. The first group includes the complexity of systems, technological incompatibility and a lack of standardisation. The cashless economy may not be beneficial for an entity due to a lack of critical mass, an unfavourable revenue sharing model and the high costs associated with the acceptance of payment cards (fixed and variable) in relation to turnover. Social factors on the retailers' side may include a lack of knowledge about particular payment mechanisms, or resistance to innovation (observed especially in the case of older merchants).

3.3. Interactions between Retailers and Consumers with Regard to Payments

Many studies have explored the interplay between consumers and merchants on the basis of the concept of two-sided markets, described among others by: Rochet and Tirole (2003), Eisennman, Parker and Van Alstyne (2006), Rysman (2009), McAndrews and Wang (2012), and Rysman and Wright (2014). The concept of two-sided markets focuses on network externalities and the role of intermediaries in matching and pricing for two interrelated markets. Table A.2 in the Appendix presents selected empirical papers that concentrate on the interactions between merchants and consumers based on the above-mentioned theoretical background. It contains the main findings of analysis of these interactions.

The findings of the empirical studies are different because they relate to markets of different maturity. Different conclusions were also drawn in studies on one market (the case of Canada is analysed in five of the studies) due to the different time range of the research and the different forms of payments examined. However, all empirical studies show strong interaction based mainly on customer preferences and merchants' costs. This relationship was also identified in empirical studies on the adoption of cashless payments by enterprises (section 3.2) where it was concluded that customer demand was the most important factor determining a trader's decision to accept non-cash payments.

It is worth noting that the preferences and costs vary mainly between cash and non-cash payment methods, but also within non-cash payments, including different types of payment cards (debit, credit). In addition, the prices of particular payment instruments used by a specific party to the payment transaction (payer, payee) may be based on the assumption of a two-sided market (with the use of interchange fees),

which affects the ability to set the direction and pace of development of a payment market characterised by the low level of development of the cashless economy.

3.4. Costs and Benefits of Different Payment Methods

The costs incurred by enterprises are examined as part of so-called "private costs"[1]. A synthesised review of research in this area including the main findings is provided in Table A.3 in the Appendix. The vast majority of the research focuses on the costs incurred by retailers, and conducts a comparison between the costs of cash and card payments. The results of estimating the costs of debit and credit card payments depend on the model of the payment card market in terms of the distribution of fees for card operations. It should be noted that payment pricing is a complex matter (due to the above-mentioned network externalities), being the subject of antitrust investigations carried out by the European Commission (2015).

Some research papers concentrate on broader aspects related to the advantages and disadvantages of certain forms of payment. Greenham and Travers-Smith (2019) claim that firms' ability to accept digital payments in the UK varies widely across the country and is different in urban and rural areas. They also find that smaller businesses in many sectors require cash handling facilities. Payment in cash is convenient for businesses which operate on tight margins and cash flow, as it can be immediately used to pay for expenses, whereas receipts from card or other electronic payment can take days to clear through the banking system. They also note that merchants incur costs for the processing of card and contactless payment methods.

Statham, Rankin and Sloan (2020) also draw attention to the disadvantages of cashless payments. They report the inconvenience for some small businesses caused by the UK's shrinking cash infrastructure and increasing bank charges for processing cash takings. In their opinion, rising fees associated with card transactions present a barrier to small businesses.

Bhatt (2021) indicates the benefits arising from the access to cashless transaction systems for MSMEs operating in emerging markets. These include reduced friction and increased efficiency by allowing firms to buy stock and materials, and get paid more easily and quickly, as well as the ability to expand their customer bases (both offline and online), and access working capital in the form of advances backed by future customer receipts. He also draws attention to the cost of cash management.

In conclusion, ignoring the fact that the reviewed studies have a limited territorial scope and in some cases are based on old data, they almost exclusively consider

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[1] The concepts of private, social and other cost categories, as well as a synthetic comparison of the results of global surveys of the costs of payment instruments from the perspective of various entities (including consumers, financial institutions, the state), are presented in (Górka, 2013).

the cost of receiving payments. Therefore, there is no holistic approach to the area of payments in enterprises of a different scale and form of activity. There is also no discussion of the advantages and disadvantages of being cashless in conditions of an incomplete cashless economy.

3.5. Cash and Cashless Policy Implications

Studies that concentrate on cash and cashless policy implications consider specific cases of state intervention in the payments market. Ibrahim and Zameer (2018) examined the impact of cashless monetary policies (demonetisation) on micro, small and medium-sized enterprises in India. Demonetisation in this case meant the withdrawal from circulation of large denomination banknotes, and was aimed at reducing the shadow economy. The results of the research showed that its impact on different sectors varied, and concerned overall performance. The sudden shift to a cashless economy severely affected the operation of small enterprises in rural areas due to their reduced ability to operate without cash.

Phinaonyekwelu and Chinwe (2020) explored the effect of central bank policy on the performance of micro, small and medium scale enterprises in Anambra State in Nigeria. A policy of the Central Bank of Nigeria (CBN) introduced a cash handling charge on daily cash withdrawals exceeding N500,000 for individuals and N3,000,000 for corporate entities. The principal findings of the study are that Internet/online banking services, automated teller machine services and mobile banking services, disseminated as a result of this policy, had a positive and significant effect on the performance of MSMEs, however, only those with the capacity to access these services.

Gorshkov (2022) explored cashless payments in Russia and claimed that the transition toward a cashless economy in Russia is overly centralised and administered by the Bank of Russia. In his opinion, the state-driven approach to digitalisation raises concerns about the privacy and security of market participants, and excessive penetration of this sector by the government creates uncertainty for market participants, as well as generates fear about the level of authoritarian control of the economy.

Unlike policies in emerging countries, developed countries are considering or introducing bans on non-cash enterprises in response to limited access to basic products and services for cash-only users (the problem of financial exclusion). For example, this is the case in several cities and states in the US. Meng (2020) examined the different rationales that can be applied to cashless business bans and distinguished three reasons businesses state for shifting to cashless payment systems: improvements in business operations, employee and consumer considerations, and social issues.

A study that should be included in the field of policy issues related to consumer protection on the payment market, is that carried out by Arvidsson, Hedman and Segendorf (2017). They present a research model that explores when traders will stop accepting cash in Sweden, a country where the idea of a cashless society is very advanced. They draw attention to the fact that retailers in Sweden may refuse to accept cash, but at the same time are not allowed to impose a surcharge on consumers paying with any accepted form.

To sum up, there are differing premises and forms of interference in the functioning of the payments market which influence the strategies of enterprises in the area of payments. Due to the dynamically changing landscape of payments on a national and global scale, as well as economy-wide factors, this area requires further research.

4. Recommended Directions and Scope of Future Research

The motivation to adopt specific forms of payment is relatively well recognised in the literature, but only in relation to a specific group of entities distinguished in terms of scale of activity, industry and geographical area. Moreover, previous empirical studies pay insufficient attention to the fact that enterprises are not only recipients that influence the form of payments, but also payers in relation to other enterprises, employees and public institutions.

The relationship between entities in the area of payments, and the benefits and disadvantages associated with non-cash payments, have been examined in the context of specific market and institutional conditions. Studies distinguish areas of impact of the cashless economy at the macro- and microeconomic levels. The macroeconomic perspective considers the economy as a whole, with the focus on the relations between payments and GDP, the shadow economy, budget receipts and the operation of the payments system itself. This also includes the role of the financial sector in payments. At the microeconomic level, research covers the perspectives of consumers and enterprises. Among the research into enterprises, that on retailers dominates.

The transition towards the cashless economy takes place as a result of decisions taken at the level of the state and by individual entities, although at the latter level it is often enforced by regulations. Other motivations for companies to switch to a "cashless mode" include expansion of the customer base and enhanced security, as well as many others not yet identified for individual economies. Equally important are the barriers that stand in the way of transforming entities towards cashless operation. While cash and non-cash management can be a source of costs and risks, it can also bring effectiveness and a broadly accepted competitive advantage.

Considering the research carried out so far, future studies should concentrate on identifying the opportunities and threats (especially costs) related to a fully cashless economy for enterprises of different scales of activity and representing different sectors. This should be supplemented by defining the potential strengths and weaknesses of fully cashless enterprises in contemporary economies, considering the national and international dimensions of their activity.

At the same time, it is necessary to identify the barriers and drivers related to the cashless economy from the perspective of the individual characteristics of businesses and their relationships with their environment (contractors, employees, offices). More research is also needed to explore the expectations of enterprises in terms of support in the transition towards the cashless economy.

In the academic literature, it is hard to find papers that investigate B2B payments. In this area, the specificity of various industries and solutions used in payments between entities of similar and different scales of activity should be taken into account.

Further research would be useful for understanding business payment behaviour, especially based on the perception of the market, technological, social, and institutional conditions of the cashless economy. These conditions include the offers and policies of payment service providers, market infrastructure and regulations, as well as behaviour, and the complex interactions with other groups of payers and payees.

Finally, it is worth mentioning that official data on payments in enterprises do not show the real importance of the cash economy, which occurs mainly in the shadow economy. In this area, it is therefore necessary to fill knowledge gaps on the basis of estimates of the shadow economy, as well as observations of payment behaviour and the attitudes towards cash declared by respondents.

Filling the research gaps identified above requires a holistic approach to payments in enterprises. It requires data collection from businesses representing different scales and industries, and using both quantitative and qualitative methods or even triangulation of research methods. Quantitative research should be national in scope. This is justified by the national nature of the regulations on cash and non-cash transactions and the differences in payment habits between countries. The method of collecting survey data should provide access to entities using modern technologies and those that are more conservative. Therefore, PAPI and CATI methods seem to be a better solution than, for example, CAWI. The selection of the sample should consider the company location criteria, i.e. the macroregion in which the company is based and the size of the company (measured by staff size and turnover value), as well as the industry. In qualitative research based on e.g. individual in-depth interviews (IDI), it is necessary to ensure the participation of enterprises with diverse profiles and scales of activity.

Appendix

Table A.1. Selected Empirical Papers on Adoption of Cashless Payments by Enterprises

Authors (Year)	Object	Subject	Location	Method/Approach/Theory
Developed economies				
Mallat & Tuunainen (2008)	merchants	mobile payment systems	Finland	qualitative (based on in-depth interviews) and quantitative approach (analysis of the questionnaires)
Petrova & Wang (2013)	small business retailers	mobile payments	New Zealand (Auckland)	qualitative approach (based on semi-structured personal interviews)
Cabanillas, Slade & Dwivedi (2016)	businesses (different sectors and scale)	mobile payments	Spain	quantitative approach (semi-structured survey methodology)
Fung *et al.* (2018)	SMEs	cash and credit cards	Canada	merchant indifference test proposed by Rochet and Tirole (2011)
Górka (2012)	merchants	cash and payment cards	Poland	surveys based on CAPI method
Polasik & Marzec (2018)	merchants	payment cards	Poland	surveys based on CATI and the logit model
Szalacha-Jarmużek, Polasik & Jakubowska (2022)	merchants	payment cards	Poland	qualitative (based on in-depth interviews); the concept of institutional isomorphism by DiMaggio and Powell (1983)
Emerging economies				
Loke (2007)	merchants	credit cards	Malaysia	quantitative approach based on data obtained by questionnaire and a binary choice logistic regression model

Table A.1 cnt'd

Authors (Year)	Object	Subject	Location	Method/Approach/Theory
Moghavvemi *et al.* (2020)	merchants	mobile payments	Malaysia	qualitative approach (based on in-depth interviews from multiple retail categories)
Citradika, Atahau & Satrio (2019)	batik SMEs	non-cash transactions	Indonesia (Pekalon-gan)	quantitative approach based on data obtained by direct interviews with respondents and theory of interpersonal behaviour proposed by Triandis (1977)
Chairunnisa, Alfina & Yasmin (2020)	MSMEs (food and beverage sector)	cashless payments	Indonesia (Tuban, East Java)	qualitative approach (in-depth observation based on IDI)
Yeboah *et al.* (2020)	merchants	mobile payments	Ghana	qualitative approach based on technology acceptance model and the trust-theoretic model
Kwabena *et al.* (2021)	SMEs	mobile payment system	Ghana	quantitative approach based on closed-ended question-naire (145 respondents) and a structural equation modelling (SEM)
Abebe & Lessa (2020)	merchants	mobile payments	Ethiopia	quantitative approach based on research model
Sinha & Singh (2022)	merchants	mobile payment services	India	quantitative approach based on online survey of 215 Indian merchants and modified TAM model

Source: the author.

Table A.2. Selected Empirical Papers on Interactions between Merchants and Consumers with Regard to Payments

Authors (Year)	Subject	Location	Main Findings
Rysman (2007)	payment cards	USA	There is a correlation between consumer usage and retailers' acceptance which suggests a positive feedback loop between consumer usage and retailers' acceptance of payment cards
Briglevics & Shy (2014)	credit cards, debit cards and cash	USA	A discount would steer some customers to a cheaper payment method – debit card and cash
Bounie, François & Van Hove (2016)	payment cards	France	Consumer preferences drive retailers' card acceptance

Table A.2 cnt'd

Authors (Year)	Subject	Location	Main Findings
Carbo-Valverde, Chakravorti & Fernandez (2016)	payment cards (inter-change fees)	Spain	Reducing interchange fees may have a positive effect on adoption by consumers and retailers adoption and usage when retailers' adoption is far from complete
Arango *et al.* (2012)	payment innovations	Canada	Diffusion of payment innovations is an inher-ently complex problem as traders will accept these innovations only if they believe that con-sumers demand them. Consumers will demand them only if they are accepted by traders
Arango, Huynh & Sabetti (2015)	payment cards	Canada	In mature card payment markets card users are quite unresponsive to variations in incentives and the reductions in merchant fees may broaden retailers' acceptance of electronic payments while having minimal impact on market outcomes
Fung, Huynh & Kosse (2017)	different payment methods	Canada	Retailers' perceptions and the costs they incur from accepting payment methods are not the only factors that determine which methods they accept. Retailers also consider which payment methods consumers are likely to carry and prefer
Wakamori & Welte (2017)	cash and payment cards	Canada	Based on a policy simulation imposing univer-sal card acceptance among traders the authors find that overall cash usage would decrease by only 8.0 percentage points, implying that cash usage in small-value transactions is driven mainly by consumer preferences
Huynh, Nicholls & Shcherbakov (2019)	payment instruments	Canada	The network effects originating on the con-sumer side of the market are stronger than those coming from the retailer side. Under full adoption and acceptance of all payment instru-ments by both sides of the market, consumers and retailers would continue using cash

Source: the author.

Table A.3. Selected Surveys on Costs of Payments Incurred by Enterprises

Authors (Year)	Subject	Location	Main Findings
Bergman, Guibourg & Segendorf (2007)	cash, debit and credit card pay-ments	Sweden	For low-value payments, cash is more cost efficient, both from a social and from a pri-vate perspective. Retailers pay too much for credit-card payments

Table A.3 cnt'd

Authors (Year)	Subject	Location	Main Findings
Schmiedel, Kostova & Ruttenberg (2012)	cash, credit and debit cards, and, in some countries, cheques	13 European countries	Half of the social costs are incurred by retailers. Retailers incur higher private costs than do banks or infrastructures, as they face higher external costs to be paid to other participants in the payment chain
Jonker (2013)	cash and debit card payments	The Netherlands	The efficiency gains in the payment chain arising from innovations and economies of scale were for the most part achieved on the retailers' side. The lowering of debit card acquiring fees made debit card payments more attractive for retailers. Increased fees for cash withdrawals and cash deposits have made cash more expensive for retailers
Stewart *et al.* (2014)	debit and credit cards, eftpos, cheques, direct debit, cash	Australia	Payment cards are the most expensive instrument and cash is the lowest-cost instrument for SMEs. Large businesses reported that debit transactions cost less than cash
European Commission (2015)	cash and card payments	10 European Union countries	The current costs of cards for traders exceed the cost of cash per transaction. Due to the current price policy of payment organisations the retailers suffer a negative externality
Carlos & Taylor (2009)	cash, debit cards, and credit cards	Canada	Debit cards are the least costly payment method for a broad cross-section of traders because of the relatively low debit card fees per transaction. Small traders still perceive cash as the least costly payment method at the point of sale
Kosse *et al.* (2017)	cash, debit card and credit card payments	Canada	Debit cards carry the lowest private costs for retailers for transactions over $20
Cabinkova, Knümann & Horst (2019)	cash, giro-card, direct debit, credit card	Germany	It is not possible to determine which means of payment is currently the most cost effective for a given enterprise, so having a mixture of payment options seems to be the most attractive arrangement at present. Cash is not necessarily more expensive than electronic payment procedures, and in some cases it can even be the least expensive choice

Table A.3 cnt'd

Authors (Year)	Subject	Location	Main Findings
Danmarks Nationalbank (2019)	cash payments, card payments at point of sale, online card payments and other remote payments	Denmark	More than half of the amount of costs related to payments at point of sale can be attributed to cash payments as they are more resource-consuming for retailers than card payments. A significant cost in connection with card payments at point of sale is the fee payable by retailers for receiving such payments, i.e. the acquiring fee
Przenajkowska & Polasik (2019)	cash, prepaid cards, debit cards, credit/ charge cards, mobile payments, credit transfers and direct debits	Poland	The highest costs were generated by cash regardless of the analysed group of enterprises. The second most important payment instrument in this respect was the debit card. In physical points of sale, the lowest share of private costs was observed for credit transfers. In e-commerce, the highest share in private costs was recorded for cash on delivery followed by pay-by-link and then payment cards. In payments of bills, the highest private costs were reported for cash, direct debit and credit transfers

Source: the author.

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Diversity Management in the Medical Device Industry in the Light of the Results of International Empirical Research

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ABSTRACT

Objective: The article aims to identify and evaluate the diversity management practices used in
enterprises as well as the benefits and difficulties of diversity management.
Research Design & Methods: Empirical research was carried out in 2018–2020 using a diagnostic
survey with a survey technique. The study surveyed 130 managers representing various medical
device industry enterprises from four countries – Germany, Great Britain, France, and Poland.
Findings: The most frequently used diversity management practices were flexible working hours,
integration activities for employees, and analysing employment structures and job satisfaction.
The analysis results also confirm that the managers more often perceived the benefits of
diversity management than the difficulties. At the same time, diversity management practices are
implemented spontaneously in most companies.

Implications/Recommendations: The results of the research may be a source of practical recommendations for companies from the medical device industry *vis-à-vis* the broader use of diversity management. It may help them think about how to implement such practices and activities in their everyday routines. The research presented herein focused on three selected dimensions of diversity – age, gender, and multiculturalism. In the future, wider, cross-sectional research covering wider dimensions of diversity management in more countries would be worth doing.

Contribution: The presented research attempts to fill the gap in diversity management in the innovative and rapidly developing medical device industry.

Article type: original article.

Keywords: diversity management, medical device industry, diversity management practices, managerial competencies.

JEL Classification: M14, L65, F23.

1. Introduction

Modern organisations operate in conditions of constant change. This is largely conditioned by globalisation, the development of technology, employee mobility, shortened product life cycles, and often even of the enterprises themselves. When an organisation and the environment it operates in constantly change, intangible assets become crucial (Salopek, 2006; Bassett-Jones, 2023). Given the effects of globalisation and innovation, people and their potential become the organisation's most valuable capital, often constituting a source of competitive advantage (Liu, 2017; Minbaeva, 2017). At the same time, the teams operating within a given organisation are increasingly diverse. This is influenced by many factors, such as rapid internationalisation and globalisation, expansion and mergers, increasingly dispersement across different geographic locations, aging societies, and intensive demographic changes resulting in the functioning of one team of people representing several different generations of employees (Syed & Özbilgin, 2019).

Internationalisation and technological development have also ratcheted up demand for highly qualified employees. With the lack of specialists, those who may once have been on the labour market's periphery, including minorities, immigrants, and older people, are increasingly employed (Meschi, Taymaz & Vivarelli, 2016). In recent years, public awareness of human rights and equality in employment has grown, increasing the enforceability of anti-discrimination laws. In conclusion, diversity management (DM) grows out of economic changes, but its development is also strongly related to profound social changes (Inglehart, 1997). This area of management is therefore more and more often taken up in scientific research, which presents numerous approaches to solving the problems that attend it. In this article,

we examine diversity management from the point of view of human resources management.

Despite the advantages of diversity management, it has not been implemented uniformly in enterprises. For example, such management is rarely used in Poland, especially by small and medium-sized enterprises, and is somewhat limited to preventing discrimination. A lack of DM-related knowledge and competencies among management may be one reason for this (Kupczyk, Oleszkiewicz & Kubicka, 2014).

The present study focuses on managing the diversity of human resources in the medical devices industry. This area of the economy was selected for the range of its attributes: innovation is very high, it has great development potential, and is international. In fact, the medical devices industry is among the world's most innovative and rapidly growing industries (Gacek *et al*., 2013; Feliczek, 2016). The industry's international operations, specific market requirements, and the importance of scientific activities in developing new, high-technology products have led to high expectations being placed on enterprises and their managers (Chatterji, 2009). The opportunities arising from employee diversity management must be effectively used to meet these expectations in a rapidly transforming market. The literature on the subject shows extensive interest in the matter of managerial competencies, taking into account individual industries, including medical entities (Bloom *et al*., 2017; Ginter, Duncan & Swayne, 2018; Krówczyński, 2019; Hampel, 2021) and pharmaceutical companies (Qurashi & Zahoor, 2017; Ricardianto *et al*., 2022). However, little research has been done on the management staff of the medical devices industry in the context of diversity management. The research presented here is an attempt to fill this gap.

Empirical research was carried out using the diagnostic survey method with a survey in 2018–2020. 130 managers representing 130 medical device companies in four European countries – Germany, France, Great Britain, and Poland – participated in the research. Apart from Poland, the countries are highly active in the medical devices industry. Germany, France, and Great Britain are among the six countries with the highest number of registered medical device business entities, and the highest percentage of people employed in the industry in Europe.

The presented research aimed to identify and evaluate the diversity management practices used in the analysed enterprises and the benefits and difficulties of diversity management.

The article blends theory and empirical evidence. The first part presents an analysis of the literature on diversity management and a brief characterisation of the medical device industry. This is followed by a discussion of the empirical research methodology, including the purpose, research questions, and research tool. It also briefly characterises the group of respondents. The study on diversity management in the enterprises analysed is then presented. The article ends with a summary

and a brief discussion of the study's limitations and potential directions for further research.

2. Literature Review

Contemporary organisations operate in a rapidly changing environment. This compels them to introduce newer and newer solutions that enable the effective use of resources. Factors with the highest impact on organisations include international-isation and international integration. These lead to the opening of new markets, the mass flow of work and products on a global scale, a further struggle for competitive advantage, demographic changes, the formation of multicultural and multi-ethnic societies, the flow of capital, rapid technical and technological progress, and natural disasters (Słocińska, Czarnecka & Przewoźna-Krzemińska, 2008). The influence of these factors is causing countries, economies, markets, and organisations to become less and less homogeneous and turn towards diversity.

DM grew out of demographic and socio-political changes in the United States in the last century and then spread to other parts of the world. It is more and more often addressed in the literature, with numerous factors influencing the need to imple-ment DM being emphasised. According to research, three dimensions differentiate employees in the organisational reality: primary identity, secondary identity, and organisational identity (Walczak, 2011). Primary identity is the individual's internal dimension, including their psychophysical features, knowledge, abilities, predispo-sitions, awareness, value system, norms and beliefs. It is shaped by their upbringing and external environmental factors. Secondary and organisational identity, on the other hand, refers to an individual's place in society, i.e., the roles and functions they perform in their private and professional life. Secondary identity includes place of residence, material status, marital status, education, and qualifications. Organisa-tional identity depends on the organisation's culture and conditions, including the nature of the work performed, position, employee privileges, and responsibilities (Walczak, 2011).

The categorisations of identity and related diversity one finds in the literature are broad and sometimes obvious. Today, diversity concerns all aspects that differen-tiate people. These include not only externally visible features (such as gender, skin colour, language, and health status) but also invisible aspects such as learning style, values, and experience (Rakowska, 2021).

Multiple approaches to DM have been presented in the literature. One is the business approach, in which the diversity of employees is perceived as a strategic resource used to achieve economic benefits for the organisation. The legal and moral system approach, meanwhile, is limited to equal treatment of employees (Rakowska & Cichorzewska, 2016). Another view is the narrow and broad approach. In a narrow path, only one or two dimensions differentiating human resources are

considered, e.g., age and gender. However, in the broad approach may take several into consideration (Kopeć, 2014; Rakowska, 2018).

Researchers have put forward a number of definitions of DM (Gajek, 2014; Sabharwal, 2014; Rakowska, 2018, 2021), with most focusing on two aspects. The first is related to employees, their needs, potential, differences between them, and a friendly employment environment involving respect and fairness. The second aspect concerns the organisation's profit, development, competitive advantages, and the achievement of business goals. The emphasis on individual elements mainly differentiates the definitions of DM. Some authors consider issues related to employees and their needs to be superior, while others focus on profits for the organisation or process action. Diversity management is, therefore, not a straightforward concept. However, the research results presented in the literature indicate that diversity among employees is a vital organisational resource, one that can translate into business benefits.

Migration movements, which are currently very widely observed, especially in European countries, has helped societies become more diverse. EU policy indicates that diversity in culture brings undoubted benefits at the level of governments and organisations but poses new problems and challenges to those managing countries and organisations (Rakowska, 2021).

Researchers point to numerous benefits a well-thought-out and carefully implemented diversity management strategy can bring (Allen *et al*., 2008; Chavez & Weisinger, 2008; Skrzypek, 2018). The key benefits include increased competitiveness, opportunities to enter new markets, improved flexibility and adaptation on the part of the organisation, faster and more frequent perception of options in the environment, enhanced service for diverse customers, increased creativity and innovation, improved human capital through an increase in the diversity of skills and knowledge, access to talents, and shaping a positive working climate (Singal, 2014; Jelínková & Jiřincová, 2015; Kemper, Bader & Froese, 2016).

Detractors, on the other hand, enumerate the imperfections of DM, such as high costs, greater employee demands, the risk of marginalising some employees, the risk of disorganisation of activities or communication difficulties (Wziątek-Staśko, 2022). Multiple factors can cause a company to fail to implement diversity management, including a lack of competencies or knowledge of DM among management (Kupczyk, Oleszkiewicz & Kubicka, 2014). Other sources of failure extend to stereotypes, prejudice, lack of systemic, coherent actions, lack of trust in interpersonal relations in the organisation, and improper communication of activities (Walczak, 2011).

In this paper we look at diversity management in the medical devices industry, which, along with the pharmaceutical industry, "supports" the healthcare system. It features very high innovation, strong development potential, and an international

character. The effectiveness of achieving goals related to the protection of public health depends on the use of medical devices containing a wide range of products that enable the diagnosis and treatment of patients (Feliczek, 2016).

The medical device industry, which is often included in the medical industry or referred to as medical technology, includes companies that produce and sell medical devices. A medical device is one that meets the criteria of a medical device (for European countries, those criteria have been laid down in the Directives of the European Commission). The devices include instruments, apparati, devices, implants, in vitro reagents, calibrators, software, and the like, which the manufacturer has produced to use individually or in combination with other devices to diagnose, prevent, monitor, treat, or alleviate the symptoms of diseases. They can be well--known, everyday items like plasters, syringes, or latex gloves, but also more innovative solutions, such as diagnostic tests, wheelchair glasses, or more technologically advanced scanners, monitoring devices including ones created to do ultrasound, life support machines, implantation devices (MedTech Europe, 2015).

Currently, the medical device industry is most often described as heterogeneous and innovative. It is expected to further develop and increase in importance (Ramakrishna *et al*., 2015). Among the main factors determining its development are the progress in medicine, increase incidence of civilisation diseases, the aging of societies, and the occurrence of new diseases. These determinants and the growing wealth of organisations have led and will further lead to increased demand for healthcare services, which translates into increased healthcare costs (MedTech Europe, 2015). They can be reduced by improving patients' diagnoses, treatment, and rehabilitation by maintaining economic optimisation while using high technologies.

The medical device industry is growing at a pace similar to the arms and computer industries (Chatterji, 2009) – that is, among the fastest-growing in the world. This development extends to the increased sales of traditionally available products and the design and implementation of new, innovative products (Feliczek, 2016). The latter products mean the medical device industry is a high-tech one. It is developing particularly robustly in countries with highly industrialised, innovative economies and high national income *per capita* (Gacek *et al*., 2013). In addition to its production and commercial activities, the industry's innovativeness and technological advancement have given rise to highly developed research and scientific training. The industry's material products are often the culmination of years of scientific research and cooperation with the scientific and academic community. A solid scientific core requires the creation of highly specialised and well-paid jobs not only in the devices' sector but also cooperating sectors.

Despite the positive socio-economic impact, the medical devices industry is described as difficult to operate. High investment outlays, scientific activity, and a wide range of product users (public units, private organisations, and individual

clients) mean that many companies are unable to negotiate the market's tough conditions, and many ideas do not see the light of day or do not generate the expected return on investment. In addition, the extensive legal requirements governing the industry are an essential barrier to entry. The medical device industry is one of the most regulated industries. In addition, legislative differences from country to country can inhibit the free international trade of products (Eatock, Dixon & Young, 2009).

The medical device industry is one of the most innovative and dynamically growing in the world (Gacek *et al.*, 2013; Feliczek, 2016). Specific market requirements, the importance of scientific activities in developing new, high-technology products (Chatterji, 2009; Lee-Makiyama, 2016), and the international nature of operations all combine to mean a great deal is expected of both enterprises in the industry and their management teams. The opportunities arising from employee DM must be effectively used to meet these expectations in a rapidly transforming market. The literature analysis on the subject showed extensive interest in managerial competencies across industries. Work done on medical care looked at the role of managers of medical entities (Bloom *et al.*, 2017; Ginter, Duncan & Swayne, 2018; Krówczyński, 2019; Hampel, 2021) and pharmaceutical companies (Qurashi & Zahoor, 2017; Ricardianto *et al.*, 2022). However, there is a paucity of research on management in the medical device industry and analyses that look at DM. The present research will contribute to filling this gap.

3. Research Methodology

In this article we have used the quantitative approach. The research set out to identify and evaluate DM practices used in enterprises as well as the benefits and difficulties of diversity management. It sought to find answers to the following research questions:

RQ1. Do the companies in the study have a diversity management strategy?

RQ2. What are the differentiating dimensions of employee diversity?

RQ3. What diversity management practices are used in companies in the medical device industry?

RQ4. What benefits and problems related to diversity management do the respondents identify?

After analysing the literature on the subject and reports and materials provided by organisations related to the medical devices industry, research questions were formulated, and a questionnaire was designed.

The research presented here is part of a broader research project on the competencies of managers in the medical device industry and diversity management in the companies they represent. The research questionnaire was self-developed. However,

the questions were developed in the light of the literature review and verified during pilot studies (individual interviews with managers in the industry).

The part of the questionnaire devoted to managing diversity contained eight questions. Respondents expressed their opinions on diversity management using a 5-point scale, where 1 was the lowest value, and 5 – the highest. The questions concerned the applied diversity management practices, benefits, and possible problems related to implementing DM in the respondent's company. Quantitative research was conducted in English, in direct contact. Managers who were Polish were shown a Polish language version of the survey. The questionnaire was translated from Polish into English and backward into Polish to ensure conceptual equivalence and transparency.

Empirical research was conducted among managers of medical device companies in 2018–2020 using the diagnostic survey method with a survey technique. The selection of the research sample was purposeful. Approximately 26,000 medical device companies are estimated to be operating in Europe (MedTech Europe, 2016). The study covered 130 managers, or about 0.5% of the population. These were mainly high- and middle-level managers, primarily at small and medium-sized enterprises (around 95% of entities in the sector are small and medium-sized). It is assumed that the design of the surveyed sample in terms of gender, age, and nationality reflected the sector's structure.

The research was conducted in Germany, France, Great Britain, and Poland. Apart from Poland, countries with a well-developed medical device industry were selected for the study. Germany, France, and Great Britain are among the six countries with the highest number of medical device business entities and also have the highest percentage of people employed in the industry in Europe. It is estimated that in 2017, the European medical device market reached a value of EUR 115 billion, constituting 27% of the global market share and placing Europe a distant second to the USA (43%). The countries that contributed most to achieving this result were Germany (27.4%), France (15.0%), and Great Britain (11.0%).

The survey was conducted among 130 managers from 130 different organisations. 21% of the managers work in micro-enterprises, 46% in small enterprises, 25% in medium enterprises, and 8% in large enterprises. At the same time, 71% of these enterprises operate in the global arena, 18% in the European arena, and 11% on a national level. 32% of the managers' organisations are registered in Germany, 19% in Great Britain, 26% in France, 18% in Poland, and 5% in other countries.

Among the managers, 11% are at a low management level, 67% at a medium or high level, 18% work under a managerial contract, and 5% did not answer. The study involved 38 women and 91 men (one person did not answer the question regarding gender). Among them, 19% represent the Baby Boomers Generation, 43% Generation X, and 38% Generation Y.

The research provided empirical material that was subjected to statistical analysis. The data obtained were entered into a database established in an Excel spreadsheet. Relationships between the qualitative variables were assessed using the chi-square test of independence. The analyses were performed at a significance level of $\alpha = 0.05$. Respondents expressed their opinions on diversity management using a 5-point scale, where 1 was the lowest value, and 5 – the highest. For comparative analyses, items for which respondents chose answers at level 4 or 5 were considered.

4. Results and Discussion

The questionnaire began with a question about applying a diversity management strategy in the manager's company. Analysis of the results – the opinions of managers, that is – showed that 54% of enterprises manage the diversity of human resources, while 34% do not. 10% of the managers could not give a clear "yes" or "no" answer.

The question of how diversity management is implemented in enterprises across the individual countries yielded interesting results. Only "yes" responses were analysed. The respondents' statements show that the percentage of positive answers is similar. The highest rate was obtained for Great Britain (60%) and France (58.8%). Slightly lower rates were obtained in Poland (47.8%) and Germany (47.6%).

While managers at more than half of the companies indicated their company had a DM strategy, only a third could refer to an actual document on the strategy. When asked about a formal document, as many as 69% of respondents answered "no" or "I do not know". A detailed data analysis using the chi-square test of independence showed no statistically significant relationships between managers' statements representing individual countries (chi-square = 5, p-value = 4.93, significance level $\alpha = 0.05$). However, certain tendencies of positive comments can be identified. The respondents' statements show that a formal diversity management strategy exists in 28% of the British and 24% of the French companies. Here too, companies from Germany and Poland indicated the existence of formal documents less frequently (12% and 9%, respectively).

The next question concerned implementing the equal opportunities policy in the companies. Most respondents (76%) stated that their company had such a policy, while 12% said their company did not. The other 12% said they did not know.

Figure 1 presents the differentiating dimensions based on which diversity is managed in the companies analysed. In the opinion of the respondents, among enterprises in which diversity is controlled, the most common differentiating dimensions are age (42.8%), gender (37.4%), and nationality (29%). The companies under analysis also consider employee differences in terms of religion and disabilities.
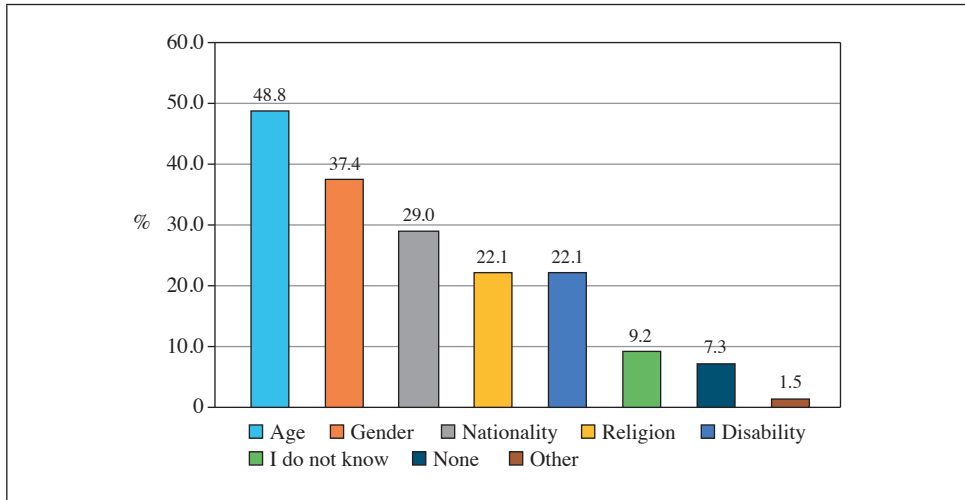
Fig. 1. Differentiating Dimensions Used to Manage Diversity in the Enterprises
Source: the authors, based on their research results.
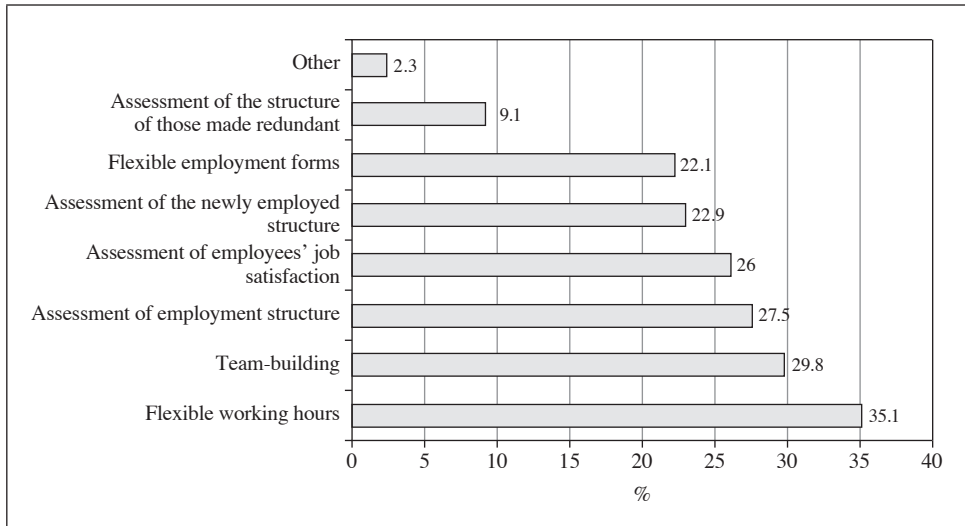
Fig. 2. Practices Used as Part of Diversity Management According to the Managers Surveyed
Source: the authors, based on their research results.

When asked about DM practices at their companies (Fig. 2), the respondents indicated the following were the most often used: flexible working time (35.1%), integration activities for employees (29.8%), research into the structure of employment (27,5%), employee satisfaction with work and new hires (26%), taking into

account the differentiating dimensions practiced in the company (23%). Flexible forms of employment were then introduced and the structure of those made redundant was analysed.

The perception of the need for diversity management in the enterprises was another exciting aspect of research. More than half of the respondents (55%) stated they see such a need in their company. Almost a third (29%) do not see such a need, while 16% have no opinion on the subject.

The respondents were also asked to indicate the benefits of diversity management (Fig. 3). These include a good atmosphere (average rating of 4.3), broader thinking thanks to different points of view (4.2), and a positive image of the organisation (4.2). Rounding out the list were: increasing the involvement and motivation of employees (4.1), expanding knowledge, enriching experiences, and developing employees' competencies (4.1), strengthening the value of culture within the organisation (4.1), and improving the capacity for problem-solving (4.0). Other benefits were rated lower.
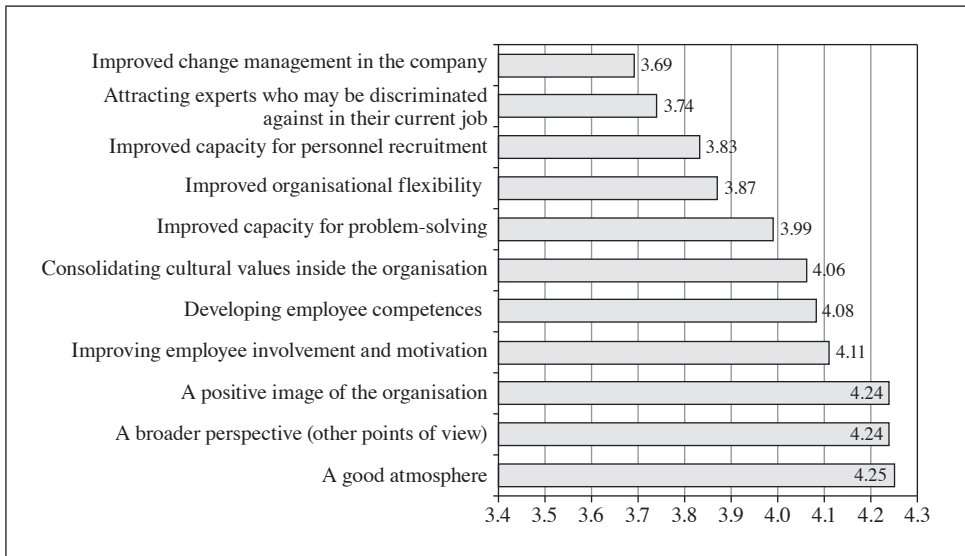
Fig. 3. Perceived Benefits of Diversity Management, Respondents' Opinions (Average Grade on a 5-Point Scale)

Source: the authors, based on their research results.

Our comparative analysis of the benefits observed by managers representing different countries yielded interesting results. The items for which the respondents chose an affirmative answer were taken into account (i.e., they rated them as 4, "I rather agree", or 5, "I strongly agree", on a 5-point scale) (Fig. 4).
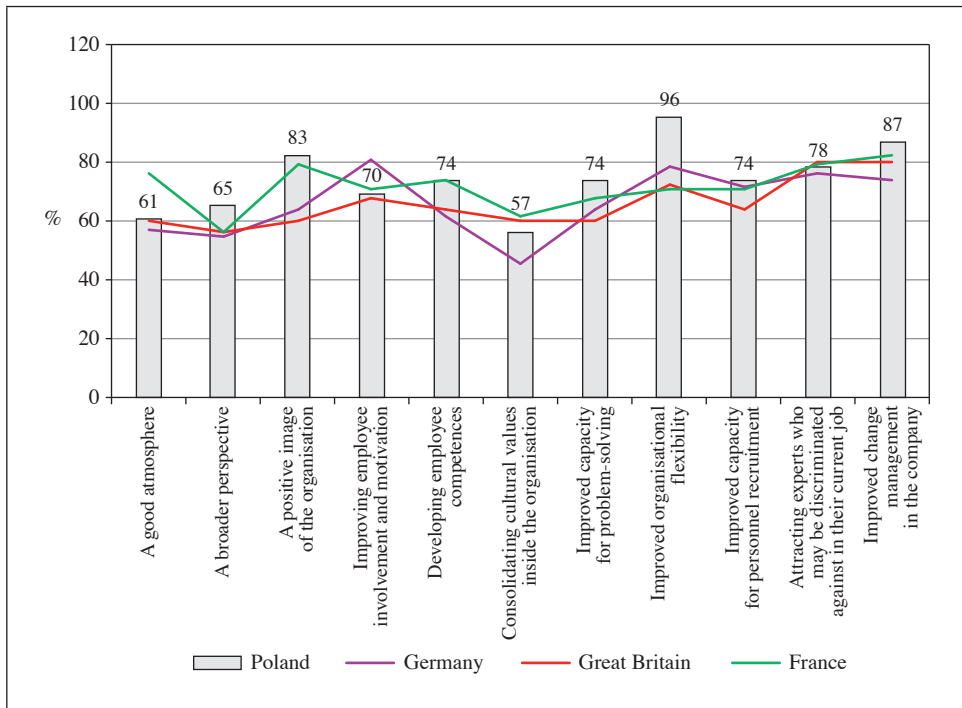
Fig. 4. Perceived Benefits of Diversity Management by Country – the Structure of Positive Ratings (4 + 5 on a 5-Point Scale; %)

Source: the authors, based on their research results.

Managers representing Polish enterprises rated the benefits of increasing organisational flexibility, change management, building a positive image of the organisation, and broader thinking (using a different perspective) more than other respondents. However, the statistical analysis of the respondents' statements showed no significant differences between countries.

Respondents were also asked to assess the problems arising from diversity management (Fig. 5). For this purpose, they were asked to indicate to what extent they agree or disagree with the following sentence: "The implementation of diversity management causes problems such as: (…)". The results presented in Figure 5 show that the managers surveyed did not confirm the occurrence of a problem. Regarding the "requirement of higher competences of managers and HR specialists", they had doubts. The average rating for this item was 3.8 (a rating of 3 meant "neither disagree nor agree"). The managers rejected the remaining three suggestions for problems. The average rating of 2 was "I rather disagree". It can therefore
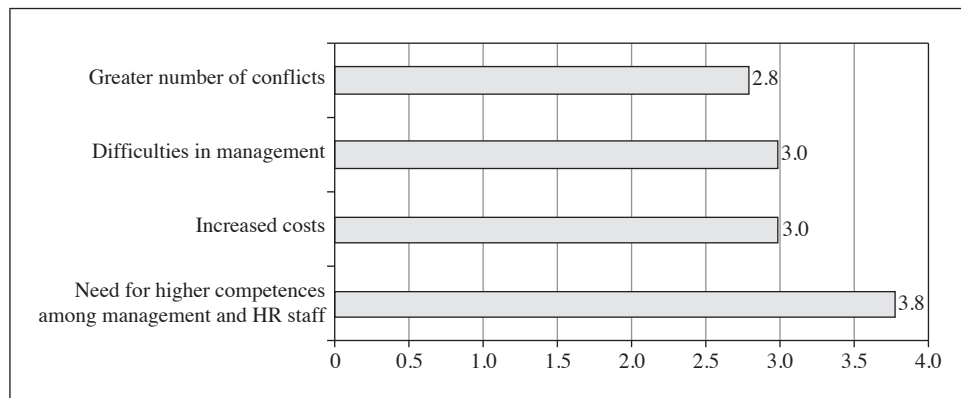
Fig. 5. The Problems Arising from Diversity Management in the Opinion of Respondents (Average Grade on a 5-Point Scale)

Source: the authors, based on their research results.

be concluded that the surveyed managers disagree that diversity management entails increased costs (3.0), hindered management (3.0), or creates more conflict situations (2.8).

5. Conclusions

The results of our research show that the diversity of human resources is managed in 54% of the medical device companies we surveyed. In terms of the individual countries, the companies in Great Britain (60%) and France (58.8%) had the highest rates, while Poland (47.8%) and Germany (47.6%) had somewhat lower rates. Nearly a third of the organisations had a formal document detailing their DM strategy. A legal diversity management strategy existed in 28% of the British companies and 24% of French ones. Companies from Germany and Poland indicated the existence of formal documents significantly less frequently (12% and 9%, respectively). Although the statistical analysis of the collected material did not show significant dependencies, some trends can be observed here. For example, companies in Poland and Germany still have a lot to do to implement employee diversity management policy. It is worth noting that the difference between the number of enterprises in which diversity is managed (according to the respondents' declarations) and those in which there is a formal document regarding this area may indicate that managers are not informed about such a document or that the approach to diversity management is "spontaneous". At 69%, the high rate of "no" and "I do not know" responses to the question about the diversity management strategy may suggest the issue is not a point of focus in the enterprises.

Age, gender, and nationality were the most common dimensions for which diversity management is applied. This is consistent with our findings in the literature. The most commonly used HR practices included flexible working time, employee integration activities, research into the structure of employment, employee satisfaction with work and new hires, and consideration of the differentiating dimensions practiced in the company.

The managers we surveyed saw the benefits of HR more than the potential problems. The highest-rated benefits include a good atmosphere, a broader perspective of thinking thanks to other points of view, and a positive image of the organisation through involvement in managing the diversity of human resources. Statistical analysis of the collected material did not show any significant differences in the statements of managers representing different countries. However, some trends can also be observed here too. Managers representing Polish enterprises rated more highly the benefits related to the increase in organisational flexibility, change management, building a positive image of the organisation, and using a broader perspective of thinking.

The literature analysis showed a research gap in the implementation status and the scope of diversity management in medical device organisations. Our aim with this research was to begin to fill this gap. The research area was limited to four countries, and the focus on three fixed dimensions of diversity only allows for generalising the results to some of the population. However, the research results indicate specific trends in diversity management in medical device companies. The results presented here may be the basis for broader research in the future.

Authors' Contribution

The authors' individual contribution is as follows: Agnieszka Sitko-Lutek 30%, Karolina Ławicka-Kruk 35%, Monika Jakubiak 35%.

Conflict of Interest

The authors declare no conflict of interest.

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The Impact of an Individual's Narcissistic Traits on Employability

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ABSTRACT

Objective: The objective of this paper is to identify narcissistic traits that may have an impact on an individual's employability and to determine the nature of the influence of these traits on employability.

Research Design & Methods: During the first stage, based on a critical literature review, narcissistic traits were identified and a 20-item catalogue of traits affecting an individual's employability was created. During the second, a diagnostic survey was conducted to determine whether the narcissistic traits in the catalogue have an impact on employability, what is the direction of influence of individual narcissistic traits on employability, and whether the nature of the influence of these traits on employability varies by type. The research sample was purposive and random. 198 respondents participated in the survey.

Findings: The obtained results confirmed that the proposed trait catalogue for studying the impact of narcissistic traits on employability can be considered as reliable. 13 narcissistic traits were found to weaken initial and internal employability, while 8 traits were found to weaken external employability. The trait that most significantly weakens employability is displaying

a demanding attitude, while the most strengthening trait is a strong belief in the possibility of professional success. Assessments concerning the impact of narcissistic traits on initial and internal employability were similar. There were differences between assessing the nature of the impact on initial and internal employability and on external employability.

Implications/Recommendations: The studies confirmed that most narcissistic traits weaken employability, while some strengthen it. It was also found that the nature of the impact of narcissistic traits may vary by type of employability.

Contribution: The study showed how individual narcissistic traits affect employability. Also indicating the differences in assessing narcissistic traits in the context of initial, internal, and external employability. These findings may be useful in shaping individual employability.

Article type: original article.

Keywords: narcissism, narcissistic traits, employability, initial employability, internal employability, external employability.

JEL Classification: E24, J230.

1. Introduction

The concept of employability is of particular interest during periods when there is a high rate of unemployment in the market. This was the situation in the 1990s, when the broader notion of a new culture of employability became widespread due to the Treaty of Amsterdam (Jeruszka, 2019). However, issues concerning employability and supporting it are important not only in a situation when there is an excess of labour supply over demand, but also when unemployment levels are relatively low. This results from, among other things, the positive relationship between a culture of employability and employee well-being that has been confirmed in the course of research (Nimmi, Zakkariya & Anju, 2023).

According to Rakowska (2021) and Jeruszka (2017), employability stands for an individual's competencies that create the ability to obtain and maintain satisfactory work, meaning ones that contribute to job security. In literature, competencies are defined in various ways (Moczydłowska, 2008). According to one of the proposed interpretations, competencies constitute the features of an individual that form the basis for effective behaviour or action at work (Juchnowicz & Sienkiewicz, 2006). In the context of employability, it is not only elements of competence such as knowledge and skills that are relevant, but also personality traits, values, rules of conduct, beliefs, or self-perception, i.e. those in which there may be manifestations of narcissism.

The study focuses on the impact of narcissistic traits on employability, due to the fact that the impact of this group of traits has not been studied. Most studies of organisational narcissism and narcissistic employee behaviours are theoretical and

very few are empirical (Campbell *et al*., 2011). Literature concerning narcissism developed only in some areas – an example is leadership (e.g. Rosenthal & Pittinsky, 2006; Fatfouta, 2019; Kowalewski & Moczydłowska, 2020). Research conducted so far does not provide a clear explanation of the relationship between narcissism and, for example, job performance (Campbell *et al*., 2011), or attitudes towards work (Sanecka, 2020). Research does not explain how narcissistic employees affect the functioning of an organisation and its performance, or how job candidates and employees showing narcissistic traits are perceived and assessed. The significance of issues related to recruiting narcissistic candidates and work performed by narcissistic employees is highlighted by Campbell *et al*. (2011). They emphasise that recruitment professionals should be aware that narcissistic candidates may appear attractive and valuable, but they should not be fooled by this impression, because they can prove to be problematic and destructive employees.

Starting from the competence-based definition of employability cited above, and following the literature and assuming the existence of three types of employability (Hofaidhllaoui, 2013), namely initial (the ability to take up one's first job), internal (the ability to advance within an organisation), and external (the ability to change employers), the objective and research questions were formulated.

The cognitive objective is to identify narcissistic traits that may have an impact on an individual's employability and to determine the nature of the influence (strengthening–weakening) of narcissistic traits on employability.

In the course of the research, answers to the following questions were sought:

RQ1. Which narcissistic traits are relevant in the context of employability?

RQ2. Which narcissistic traits enhance employability?

RQ3. Which narcissistic traits weaken employability?

RQ4. Does the nature of the impact of narcissistic traits on employability vary due to its type?

2. Employability and Narcissistic Traits in the Context of Employability – Literature Review

The rapid rate of change in today's world is reflected in the economy and the labour market. Changes in the labour market in terms of relations between the employer and employee, the increasing significance of employment flexibility, the problems with long-term employment in one organisation and the non-linearity and unpredictability of career paths make the concept of employability increasingly important. Its importance is confirmed by the Council of the EU's interest in the issue. In the conclusions of the Council of the EU of 11.05.2012 on the employability of school and university graduates, the concept of employability is defined as "a combination of factors that enable a person to move towards, undertake, and maintain employment, as well as to develop in their career – it is a complex concept,

including not only a person's character, skills, attitude or motivation, but also other external factors going beyond education and training policies, such as labour market regulations, demographics, the structure of the economy, and the general economic situation" (Konkluzje Rady UE z dnia 11 maja 2012 r. …).

Dinh, Dinh Hai and Pham (2023) define employability as a strategy in the field of human resource management, which they link to talent management. Employers should include possibilities for developing the talents of employees in their planning of organisational development. They should also offer employees the chance to improve both technical and personal skills. With this approach, employers should create opportunities for employees to develop talent.

The literature includes an approach to employability based on competencies. According to it, employability constitutes a multidimensional process that develops over time on the basis of experience. It is assumed that employees require various competences to facilitate both obtaining and keeping a job on a competitive labour market. This approach distinguishes three types of competence: know-why, know-how, and know-whom. Know-why competencies include a person's motivation as well as awareness of personal and organisational values and interests, as well as the person's identification with the organisation's goals and culture. Know-how competences refer to the knowledge, skills, and abilities required to perform a job and build a career. Know-whom competencies reflect an individual's social capital and career-relevant interpersonal relationship networks (Römgens, Scoupe & Beausaert, 2020).

The term "employability" in relation to persons looking for a job is equated with possessing specific practical skills and using them on the labour market. Pasierbek (2016) points out that, with regard to practical skills, employability is determined by the possessed competences that increase the possibility of finding employment, but also of retaining it.

Due to the automation and digitalisation processes of the labour market, the range of competences expected of employees is changing – from technical to social. In this view, employability requires a significant role for soft competences such as teamwork, project management, leadership, communication, creative thinking, professionalism, problem solving, or emotional intelligence. According to Teng *et al*. (2019), soft skills strengthen the position of employees in the labour market because they are difficult to automate.

Employability based on competences takes into account a number of factors – including basic and advanced digital skills, which are significant from the perspective of gaining and retaining employment. Mahajan, Gupta and Misra (2022) emphasise the significance of teamwork skills, communication skills, intercultural competence, ability to make decisions, specific knowledge, focus on the customer, and stakeholder management skills. This category also includes analytical skills,

ability to learn, creativity, problem-solving skills, language skills, the ability to operate under conditions of uncertainty, the ability to communicate and cooperate with others, and the ability to adapt to change.

One of the elements of employability is building career paths. It is possible to observe an increasing amount of research concerning the importance of employability for understanding individuals' careers, thereby linking employability with the constructed career path (De Vos, Jacobs & Verbruggen, 2021). Forrier, Verbruggen and De Cuyper (2015) identified professional competences and the importance of active career path building in relation to employability. They emphasised the relationship between competences, career success, and employability. Based on research conducted in the Dutch labour market, it has been noticed that people with highly developed competences who derive satisfaction from their careers are less likely to consider employment elsewhere. This means that there is an inverse relationship between job satisfaction and actively seeking new employment (Blokker *et al*., 2019). In the context of the importance of building a career, motivation is also researched. One of the motivating factors consists of the opportunity to learn and develop within the organisation. They enhance the chances of career advancement, which in turn improves perceptions of employability (Hetty van Emmerik *et al*., 2012). Authors of studies, e.g. Groot and De Brink (2000), emphasise the positive impact of education and training on employability. They point out that improving professional qualifications in terms of general and specialised knowledge has an impact on an individual's functioning in the labour market. Researchers emphasise the significance of human capital in shaping employability more generally, i.e. including: knowledge of the labour market and opportunities for development (Peeters *et al*., 2019), as well as the ability to communicate in foreign languages, confidence, and a positive attitude (Zainuddin *et al*., 2019).

Currently, digital competences are more and more significant in terms of supporting employability. The remote working model introduced during the pandemic underlined the importance of technology and digital competences in adapting to new conditions (Mahajan, Gupta & Misra, 2022). The requirement for digital competences was also confirmed in a study by Dutta *et al*. (2020).

Employability depends on an employee's individual characteristics because, on the one hand it is related to professional skills, but on the other hand it is based on the ability to adapt to changing conditions. Job insecurity can cause psychological stress, which will vary according to the gender and age of participants in the labour market. On the other hand, employability may help to cope with change and work-related challenges. Research by Ramaci *et al*. (2021) shows that psychological characteristics are important in coping with anxiety resulting from job insecurity. The authors emphasise that it is important to focus on being effective in the tasks assigned, striving towards the set goals. Researchers have shown that for individ-

uals with a sense of self-efficacy, there is greater commitment, determination, and initiative. Ramaci *et al*. (2017) also highlighted the higher levels of job satisfaction achieved, which is associated with a lower desire to change jobs.

Work is not only a place to form one's professional identity, but also includes an element of social integration. In the case of employability, an important aspect is the sustained desire for employment, which enables workers to meet their needs and adapt to the demands of the labour market now and in the future. This is important in terms of coping with changes, both within the individual and in the labour market (Le Blanc, Van der Heijden & Van Vuuren, 2017). This applies to all workers, whether they are employed or looking for work.

Narcissism is mainly described in psychology literature (Hyla, 2021). However, due to the fact that narcissistic behaviour affects the manner in which an employee functions in the workplace, in recent years narcissism has begun to be used to describe behaviour in organisations. Organisational narcissism is usually treated in terms of a pathology and anomaly in an organisation (Kowalewski & Moczydłowska, 2020). Currently, as Szpunar (2016) points out, narcissistic behaviours are becoming increasingly common, due to the widespread striving to "promote oneself", to "sell oneself effectively", which also apply to labour market behaviours. Examples of "promoting oneself" and "selling oneself effectively", often including manifestations of narcissism, consist in user profiles on LinkedIn (Karczewska, 2022). Such behaviours are associated with personal branding, which is increasingly used in the labour market (Sidor-Rządkowska, 2016).

As a starting point for cataloguing the traits of a narcissistic worker, three components of narcissism should be taken into consideration: the narcissistic self, narcissistic relationships (interpersonal relationships), and narcissistic self-regulation strategies (Campbell *et al*., 2011). The narcissistic self is expressed by a sense of being someone special and unique, a sense of entitlement, vanity, and a desire for power and respect. A feature of narcissistic relationships consists of low levels of empathy and emotional involvement. Relationships are shallow and often used to manipulate and exploit others. As part of a narcissistic strategy, the individual seeks to maintain an inflated self-esteem. For this purpose, narcissistic individuals seek opportunities to draw attention to themselves and gain the attention of others, are prone to boasting, and often appropriate the recognition of others. These strategies are used, for example, to maintain power or social status.

The above components are referred to by the criteria proposed by the American Psychiatric Association (2018) diagnosing, among others, narcissistic disorder. In published work authors usually refer to these components when describing the characteristics of a narcissist. However, the lists of traits proposed by different authors are not uniform. For example, Hall (2021) lists such traits describing a narcissist as: a sense of superiority and grandiosity; fantasies concerning unlimited

success, power, greatness, beauty, perfect love; a belief in their own uniqueness and the need to maintain relationships with those of high social status; an expectation of excessive admiration; an exaggerated sense of privilege; exploitation of others; a lack of empathy; jealousy and a belief that others envy him or her; as well as arrogance and impulsiveness. Erikson (2021), on the other hand, presents a more developed list of traits, in which he includes: an unrealistic self-image; egocentrism; talking only about oneself; a sense of exceptionalism; arrogance and haughtiness; constantly criticising and judging others; not following rules; constantly emphasising their own contribution; believing that one deserves the best; not accepting criticism; striving for power and fame; constantly seeking self-affirmation; aggressive in response to disapproval; as well as cheating and manipulation.

The components of narcissism are referred to by the traits and behaviours of narcissistic people presented in the literature, also in the context of professional work, although such references are rarely found. Nowak (2011) believes that narcissistic employees are reluctant to perform monotonous and difficult work. They care more about the appreciation of others than about the results achieved from work. They tend to overstep their competences and at the same time fail to show respect to their superiors. They act as if the rules of social life do not apply to them.

From the point of view of the subject of this study, a valuable summary of the potential benefits and costs – based on the narcissistic traits outlined above – as a consequence of employing narcissistic employees was proposed by Sanecka (2020). Among the benefits she mentioned:

– self-confidence, charisma, developed social skills that facilitate effective influence on others,

– the ability to tolerate the risks that accompany pursuing individual goals,

– higher levels of life satisfaction, lower levels of stress, anxiety, and depression,

– better ability to cope in a competitive environment,

– leadership in the short term.

However, on the other hand, the author identified the following costs of narcissistic individuals in the work environment:

– arrogance, a sense of being privileged, entitlement,

– superior beliefs about oneself,

– overestimating the potential benefits related to making risky decisions,

– a tendency to behave unethically, manipulate, and exploit others,

– leadership in the long term.

Taking into consideration the three components of narcissism, the diagnostic criteria for narcissistic personality, and the narcissistic traits presented in the literature in the context of professional work, a catalogue of 20 traits of a narcissistic worker was created:

1) exaggerating one's own professional skills,

2) emphasising one's own professional achievements,

3) emphasising one's own professional experience,

4) bragging on social media, e.g. on LinkedIn, about their own outstanding skills, experience, and professional achievements,

5) a strong belief in the ability to achieve professional success,

6) expressing exaggerated career aspirations,

7) overconfidence,

8) expressing limited trust towards colleagues as well as towards superiors,

9) emphasising one's professional and social status,

10) seeking recognition and admiration from superiors and colleagues,

11) displaying a demanding attitude,

12) lack of empathy in pursuing career goals,

13) taking advantage of co-workers to achieve one's own professional goals,

14) disregarding the needs of others,

15) tendency to take risks,

16) striving for power within the organisation,

17) judging and criticising other employees,

18) tendency to dominate other team members,

19) a tendency, not always justified, to present oneself in the best possible light,

20) highlighting the fact of having graduated from a prestigious school/university or having worked for a reputable company.

The proposed catalogue was used to assess the impact of narcissistic traits on employability as part of the second stage of the conducted survey.

3. Research Design and Methods

The research procedure was carried out in two stages. During the first stage, based on a critical literature review, an answer to the first research question RQ1 was sought, and thus the first part of the research objective was carried out. On this basis, a catalogue of narcissistic traits including 20 items that could affect an individual's employability was created.

During the second stage, a study was carried out to find out whether the narcissistic traits in the catalogue affect employability. It also aimed to establish the direction of influence of narcissistic traits on employability and the related search for answers to three research questions: RQ2, RQ3, and RQ4. The research was carried out from 9.02.2023 to 13.03.2023 using a diagnostic survey. A survey technique was used, with a survey questionnaire as the tool. The questionnaire consisted of three tabular questions. The first tabulation question studied the impact of 20 narcissistic traits on initial employability, the second on internal employability, and the third on external employability. All three questions assessed the same catalogue of 20 char-

acteristics. A five-point ordinal scale was used for the assessment: strongly weakens, rather weakens, is neutral, rather strengthens, strongly strengthens.

Selecting the research sample was purposive and random in nature. The need for a purposeful selection resulted from the necessity to obtain opinions from people possessing knowledge and experience concerning the issue being researched. For this reason, requests to complete the survey questionnaire were issued to the employees of employment agencies and labour offices. The random nature of the sample was achieved thanks to using a non-return dependent random sampling procedure. Sample elements were drawn from two separate sets, i.e. a list of labour offices (PSZ, 2023) and a list of employment agencies (KRAZ, 2023) as at 15.01.2023. The sampling procedure consisted of a procedure implemented as follows:

1. The size of the sets was determined. The list of labour offices included 356 entities, while the list of employment agencies included 8,856 entities.

2. The drawing of the research sample took place. 25% of the elements were drawn from each of the two independent sets. As a result of the random sampling procedure, a research sample of 2,137 employment agencies and 89 labour offices was selected.

3. E-mails including a link to the survey questionnaire were sent to the selected employment agencies and job centres requesting that employees complete the questionnaire.

A total of 198 completed questionnaires were returned. The structure of respondents varied by gender, age, occupation, and voivodeship. The majority of the research sample consisted of females (85.4%). The predominant age group was between 41 and 50 years of age, which accounted for 37.3% of the total number of respondents. A relatively high proportion of respondents were aged 31–40 (30.3%) and 51–60 (23.3%). The youngest and oldest age groups were least represented. Respondents under the age of 30 accounted for 6.6% and those aged 61 and over for 2.5% of respondents.

Considering the respondents' occupations (KZiS, 2023) almost 60% were recruitment agents (31.2%) and career counsellors (28.3%). The following group, although not as numerous, consisted of managers of a companies providing human resources services (11.6%). The remaining 28.9% of respondents consisted of, among others, employee recruitment specialists (5.6%), professional development specialists (4.5%), temporary work agency workers (2.1%), human resources consultants (2.0%), as well as other human resources managers and specialists (14.7%).

Representatives from all voivodeships took part in the survey. The largest percentage of respondents, at more than 10%, represented the following voivodeships: Śląskie (15.2%), Małopolskie (12.7%), and Wielkopolskie (11.1%). Average, ranging from 5% to 10%, represented the following voivodeships: Podlaskie (9.1%),

Mazowieckie (8.1%), Opolskie and Pomorskie (5.6% each), as well as Warmińsko-
-mazurskie (5.1%). The fewest respondents – less than 5% – came from the following
voivodeships: Podkarpackie (4.5%), Lubelskie and Zachodniopomorskie (4.0%
each), Łódzkie and Świętokrzyskie (3.5% each), Dolnośląskie (3.0%), as well as
Kujawsko-pomorskie and Lubuskie (2.5% each).

The data were analysed using reliability analysis with Cronbach's alpha coeffi-
cient. This coefficient indicates how much of the variance of the summary scale is
accounted for by the variance of the true value of that scale. The minimum relia-
bility of the scale is determined by a coefficient value greater than 0.6 (Sagan, 2003,
p. 40).

4. Narcissistic Traits and Employability – Findings

The catalogue of 20 traits of a narcissistic employee used in the study was
created based on a critical review of the literature concerning narcissism. Therefore,
in order to test whether these characteristics affect the studied types of employ-
ability, i.e. initial, internal, and external employability, a reliability analysis was
carried out (Table 1). The achieved alpha Cronbach values, all above 0.85, confirm
that it is possible to assume the proposed catalogue of traits for testing the impact of
narcissist traits on employability as reliable.

Table 1. Statistics of Reliability for Specific Types of Employability

Types of Employability	Alpha Cronbach
Initial	0.86
Internal	0.89
External	0.92

Source: the authors.

In the following step, a reliability analysis was carried out for the three types of
employability studied after excluding one trait. The resulting alpha Cronbach values
for individual types of employability (Table 2) are close to the alpha Cronbach total
(Table 1). This means that excluding any of the traits did not improve the reliability
of describing the different types of employability, i.e. all traits included in the cata-
logue are relevant and have an impact on employability.

Categorisation was then introduced for the rating scale: ratings 1 and 2 – the
trait weakens employability, rating 3 – the trait is neutral to employability, ratings
4 and 5 – the trait enhances employability, which allowed identification of the
nature of the impact of individual narcissistic traits on initial, internal, and external
employability and assessing whether the nature of their impact varied by type of
employability. It was assumed that if the percentage of ratings is more than 50%,

it indicates the nature of the trait's impact on employability. Thus, it was determined that the absolute majority (13) of the narcissistic traits negatively affect initial and internal employability, while the relative majority (8 traits) affect external employability (Table 3).

Table 2. Statistics of Reliability after Removing a Given Trait for Individual Employability Types

Trait No.	Alpha Cronbach after Removing a Trait		
	initial	internal	external
1	0.86	0.88	0.91
2	0.86	0.89	0.92
3	0.86	0.89	0.92
4	0.86	0.89	0.92
5	0.86	0.89	0.92
6	0.86	0.88	0.91
7	0.86	0.88	0.91
8	0.86	0.89	0.92
9	0.85	0.88	0.91
10	0.86	0.88	0.92
11	0.86	0.89	0.92
12	0.86	0.88	0.91
13	0.85	0.88	0.91
14	0.85	0.88	0.91
15	0.86	0.89	0.92
16	0.85	0.88	0.91
17	0.86	0.88	0.92
18	0.85	0.88	0.91
19	0.85	0.88	0.91
20	0.87	0.89	0.92

Notes: The number of narcissistic traits as in the catalogue.

Source: the authors.

In the case of all of the studied employability types "expressing a demanding attitude" was identified as the most weakening trait, followed by "judging and criticising other employees" and "not considering the needs of others". Employability is also strongly negatively affected by: "taking advantage of co-workers to achieve one's own career goals", "tendency to dominate over other team members", and "lack of empathy in pursuing career goals". In doing so, it is worth noting that these characteristics weaken initial and internal employability more than external.

The studied catalogue of narcissistic traits also includes those that respondents believe strengthen employability. This group of traits mainly includes: "strong belief in one's own ability to achieve professional success", "highlighting one's own professional achievements" and "highlighting one's own professional experience". These characteristics – according to respondents – are most strongly reinforced by external employability, to a lesser extent initial, and to the least extent internal. A trait that strengthens – although definitely less significantly – all types of employability is the "tendency to take risks". According to respondents, the two following characteristics enhance external employability, while not having such an impact on initial and internal employability. These traits are: "bragging on social media, e.g. on LinkedIn, about one's own outstanding skills, experience, and professional achievements" and "highlighting the fact of graduating from a prestigious school/university or working for a reputable company". The most ambiguous assessment of the impact on all types of employability was made by respondents in relation to "striving for recognition and admiration from superiors and co-workers". In the case of two traits, there is a different assessment of their impact on initial, internal, and external employability. According to respondents, "exaggerating one's own professional skills" weakens initial and internal employability, while they disagreed in terms of assessing the impact of this trait on external employability. As already mentioned, "emphasising the fact of having graduated from a prestigious school/university or working for a reputable company" was assessed as strengthening external employability, at the same time respondents disagreed in their assessments of the impact of this trait on initial and internal employability.

Table 3. Assessing the Impact of Narcissistic Traits on Initial, Internal and External Employability

Trait No.	Initial			Internal			External		
	–	–/+	+	–	–/+	+	–	–/+	+
1	73.8	14.6	11.6	72.3	14.1	13.6	43.4	15.2	41.4
2	9.6	14.1	76.3	18.2	21.7	60.1	6.6	5.5	87.9
3	10.6	10.1	79.3	16.7	23.2	60.1	8.1	7.6	84.3
4	22.2	31.3	46.5	32.3	42.4	25.3	12.6	25.3	62.1
5	1.5	9.1	89.4	4.0	10.1	85.9	2.0	5.6	92.4
6	73.2	14.7	12.1	63.6	22.2	14.2	40.9	27.8	31.3
7	67.2	18.2	14.6	66.7	20.7	12.6	44.9	18.7	36.4
8	62.1	31.3	6.6	77.8	12.6	9.6	63.2	22.2	14.6
9	67.2	24.7	8.1	69.7	23.2	7.1	49.0	23.7	27.3
10	35.9	25.2	38.9	34.8	23.2	42.0	29.3	20.7	50.0
11	94.9	2.1	3.0	94.9	4.1	1.0	86.9	8.6	4.5

Table 3 cnt'd

Trait No.	Initial			Internal			External		
	–	–/+	+	–	–/+	+	–	–/+	+
12	83.8	6.6	9.6	82.8	6.6	10.6	65.2	12.6	22.2
13	86.4	8.1	5.5	86.4	8.5	5.1	74.2	12.2	13.6
14	90.4	6.1	3.5	88.4	7.1	4.5	79.8	10.6	9.6
15	15.6	27.8	56.6	19.2	28.3	52.5	15.7	16.7	67.6
16	56.5	28.3	15.2	57.6	28.3	14.1	49.5	27.3	23.2
17	92.9	5.6	1.5	89.9	6.6	3.5	82.8	10.6	6.6
18	84.3	10.1	5.6	79.8	12.6	7.6	69.2	17.2	13.6
19	68.7	17.7	13.6	63.1	21.2	15.7	51.5	21.7	26.8
20	37.9	29.3	32.8	45.5	34.8	19.7	24.7	21.7	53.6

Notes: The number of narcissistic traits as in the catalogue.
"–" – weakens (sum of "strongly weakens" and "rather weakens" responses); "–/+" – is neutral; "+" – strengthens (sum of "rather strengthens" and "strongly strengthens" responses).
Source: the authors.

Assessments of the nature of the impact of narcissistic traits on initial and internal employability were similar. Differences were observed between assessments of the nature of the impact of narcissistic traits on initial and internal employability and external employability. In the case of external employability, the negative impact of narcissistic traits was assessed as weaker, while the positive impact was assessed as stronger as compared to the assessments made about initial and internal employability. For external employability, ratings were more often inconclusive than for the other types of employability.

5. Conclusions

Lasch (2019) believes that modern societies live in a culture of narcissism. This can be confirmed by the quite common behaviours, which include the hallmarks of narcissism, especially noticed in social media (Szpunar, 2016; Casale & Banchi, 2020). Currently, in the age of "explosion of narcissism" (Kusak, 2018), such behaviours are far more widely accepted than just a few decades ago, and attitudes to behaviours including narcissistic traits vary by generation. Representatives of younger generations are more tolerant of narcissistic behaviours than representatives of older generations (Lipka *et al.*, 2022).

Research has shown that narcissistic traits can both strengthen and weaken employability. It also shows that the nature and strength of the impact can vary depending on the type of employability. When comparing the results with other studies in a similar field, it is worth noting that they also suggest that narcissistic

traits can both enhance and undermine employability. Studies often address the phenomenon of people with narcissistic traits promoting themselves on social media, which the authors' research has shown to be one of the main factors enhancing external employability. For example, a positive correlation between social media use and narcissistic traits was found based on a 2014 survey of 2,532 respondents in Norway (Andreassen, Pallesen & Griffiths, 2017). The results of a study by Parzoń (2019) on Internet users' self-presentation on LinkedIn also show that social media profiles are a tool for professional self-presentation and can be used during a job search. This may mean that social media users see the information they post there as a means of self-promotion to help them find a job. This is consistent with the authors' findings that bragging about skills, experience and professional achieve-ments on social media, highlighting these achievements, and emphasising work experience increases external employability. Results from a survey of leaders and members of 132 research and development teams in China show that a team leader with narcissistic traits can improve team creativity (Zhou *et al*., 2019). This may mean that narcissistic traits in a leader can enhance their internal employability. At the same time, the same study's results show that a leader's narcissistic traits can also undermine internal employability, as the leader tends to dominate and expect admiration and recognition, which can negatively affect decision-making processes, and thus the evaluation of their performance in the organisation. In contrast, based on a review of the literature, Sanecka's (2015) findings suggest that narcissistic managers show a negative relationship with the quality of interpersonal relationships in teams, which negatively affects their work. On the other hand, confirmation that employees' sense of entitlement undermine their employability can be found in the results of a study carried out by the Public Employment Service in 2017, which shows that a sense of entitlement is perceived as a negative trait by entrepreneurs (in the study: the younger generation) (Muster, 2020).

A limitation of the research carried out is that most of the respondents were employees of employment agencies, whose opinions are mainly based on their expe-rience of working with a particular group of labour resources, such as the unem-ployed. This structure of respondents may have influenced their perception and assessment of narcissistic traits in the context of employability. Another limitation is that the study mainly involved employee recruiters. It is possible that assessments made from the perspective of managers and employees would change the results obtained.

Knowledge concerning the nature and strength of the influence of narcissistic traits on particular types of employability can be useful in shaping individual employability. Employees who are aware of this influence can seek to eliminate from themselves those qualities that undermine employability and develop those that enhance it. It can also be useful for recruitment professionals when assessing

job candidates. For recruiters, knowledge of narcissistic traits can be used, for example, to select employees whose presence in the team will minimise the risk of conflict, or candidates whose traits will complement each other and make the team's work more effective. Knowledge of narcissistic traits can also be used to select job applicants whose traits are compatible with the organisation's culture.

The spread of narcissistic attitudes and behaviours can also be observed on the labour market. So far, this field has not been studied. Due to the fact that the effects of narcissistic attitudes and behaviours affect both the narcissistic employee and the employing organisation, it is important, and therefore requires further in-depth research. Future research could be based on an expanded survey sample, including managers and employees. Further research could, for example, consider the nature of the work, making it possible to diagnose the impact of narcissistic traits on the employability of individuals and teams, and to identify differences according to the nature of the work.

Authors' Contribution

The authors' individual contribution is as follows: Małgorzata Król 70%,
Monika Karczewska 30%.

Conflict of Interest

The authors declare no conflict of interest.

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Gen Y in Uncertain Times of Remote Working: From the Employees' Perspective

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ABSTRACT

Objective: The purpose of this article is to identify the experiences of Generation Y employees of remote work and to identify the key factors that, in their opinion, develop or limit its effectiveness and efficiency.

Research Design & Methods: The authors carried out a questionnaire (CAWI) which was filled in by 304 respondents from Generation Y who worked remotely during COVID-19. Descriptive statistics measurements were used in the analysis. The original questionnaire was based on two measurement scales: ordinal on the Likert scale and nominal (binary and categorical). Then, the two-way data analysis method was used. Due to the nominal nature of the variables, frequency and percentage statistics were used in the statistical evaluation. For variables on the Likert scale, measures of descriptive statistics were used. In addition, hierarchical clustering analysis was

used as part of the conducted research. Quantitative research was supplemented by unstructured interviews, conducted with eight HR Business Partners.

Findings: The obtained results made it possible to conclude that workers from Gen Y have adapted quite well to remote work and were very involved in the workplace when working remotely. Unfortunately, they were also overworked and tired. Gen Y strive to effectively perform their duties, regardless of whether they work on location or from home.

Implications/Recommendations: The experience of remote work gained by organisations and employees during the pandemic was an opportunity to implement innovative solutions, suitable for pandemic and post-pandemic conditions of the functioning of enterprises in the remote work era.

Contribution: The article recognises and analyses the experiences of employees from the Y Generation who are professionally active, working remotely during COVID-19. The value of the study is the presentation of two perspectives on the experience of switching to a different mode of work organisation – remote mode. Conclusions drawn from the empirical research have an application value primarily for leaders, managers, and supporting departments, such as HRM.

Article type: original article.

Keywords: Generation Y, employer, remote work, pandemic.

JEL Classification: J11, J81, M12, M14.

1. Introduction

The generational structure of the job market is currently highly diverse. It includes representatives from the Baby Boomer, X, Y, and Z Generations. Generational differences are visible in, among others, attitudes towards work, employers, the dynamics and means of fulfilling an employee's role, professional development and career, work ethic, work styles, value systems, and diverse views on the work--life balance (Lubrańska, 2018).

In response to the outbreak of the COVID-19 pandemic, many employers were forced to introduce remote work. For most of them, and the people they employed, it was a completely new challenge, which they dealt with in different ways and with varying degrees of success. Identifying, analysing, and evaluating these experiences seem highly desirable in the face of the emerging post-pandemic "new normal", in which various forms of remote work will be increasingly popular among employers and employees (Antal, 2020; Eurofound, 2022). Remote work gives rise to widely varying experiences. To comprehend its impact on a personal level, one must consider the interplay of an individual's home environment, work-related duties, and personal circumstances, as these factors collectively influence their experiences and shape employees' perceptions and behaviours (Gálvez, Tirado & Martínez, 2020).

The authors of this paper believe that it is cognitively very interesting to look at experiences with remote work during the COVID-19 pandemic from the perspective of representatives of different generations. Finding answers to questions about how employees adapted to remote work, whether generational affiliation was important in this adaptation process, and whether there are differences between generations can all be valuable for managers of age-diverse human resources.

A review of the latest literature about remote work shows that the influence of socio-demographic characteristics of workers on their attitudes toward telework continues to raise questions (Ivasciuc *et al.*, 2022). Further research is needed in this area. This article fits into this research gap. Its aim is to present the experiences of employees who are representatives of Generation Y in remote work during the pandemic. Millennials are the largest generation in the workforce (Smith & Garriety, 2020). Together with Generation Z, it supplies the human capital of the new economy (Kawka, 2021). They are the most educated, knowledgeable, and engaged generational cohort. For these reasons, employers are interested in attracting them to their organisation and retaining them for longer. Consequently, employers must determine the working environment, incentives, and policies that will meet the needs of Millennials, including in the area of remote work (Bannon, Ford & Meltzer, 2011).

2. General Characteristics of Generation Y

Despite some theoretical and conceptual confusion (especially at the intersection of Generations Y and Z), we can safely assume that Generation Y (The Millennials) includes individuals born between 1980 and 1995 (Kwiatkowski, 2019). This generation was born and raised in entirely different circumstances than previous generations. Their childhood was spent in peace and relative prosperity. They grew up in the era of globalisation, Poland's membership in the EU, freedom of speech, challenges, and easy access to modern communication and information processing technologies (Patterson, 2007; Baran & Kłos, 2014; Smolbik-Jęczmień, 2017).

Compared to their predecessors, the Millennials were undoubtedly the most educated and technologically proficient workers when entering the job market. The extended time devoted to education means that the moment of starting a job, becoming independent, or starting a family was significantly delayed for them. Aware of their value in the market, they were upfront about their professional demands, even if they were somewhat exaggerated, and the job market valued them less. They can negotiate their employment conditions robustly (Reisenwit & Iyer, 2009; Wiktorowicz & Warwas, 2016).

Work is essential for people from the Y Generation, but it is only one aspect of their lives (Dziadkiewicz & Kłos, 2013). People from this generation do not want

to sacrifice their personal lives for work. They follow the life maxim: "I work to live" (Czernecka & Woszczyk, 2012). They prefer work that gives them a salary and, above all, a sense of meaning, purpose, and fulfilment. It should also correspond to their passions and interests and allow personal development. They believe that work should be tailored to the multiple needs they want to meet at work. It is about achieving task outcomes and receiving financial rewards, but it is also about fun, social connection, training, personal development, greater fulfilment and even environmental sustainability (Woszczyk, 2013). They want to experience new things, explore interesting ideas and solutions. That need for constant learning should be met in their working premises. They are always on the move, but that may result in work overload. They like eating out, playing sports and meeting their friends after work, and all that requires appropriate infrastructure. They value the balance between work and private life, flexibility, home office and an informal atmosphere at work. They crave interaction with their co-workers and for the office to support their work in diverse ways (Buckley *et al*., 2001; Deloitte, 2020).

This is the first generation of employees on the market who change employers so frequently and do not see any problem with it (Szymczyk, 2018). They are less loyal to their employer than previous generations and do not prefer long-term employment in one organisation. What matters to them is what they do, not who they work for (Brdulak, 2014). In situations where their job does not meet their expectations, they are willing to resign and believe that they will find a job that better suits their needs and ambitions (Andrałojć & Ławrynowicz, 2012; Stachowska, 2012; Woszczyk & Gawron, 2014). They do not accept the rat race or fierce competition. When choosing a future employer, they focus on enriching their CV, acquiring transferable skills, accumulating career capital, and increasing their value in the job market (Chester, 2006).

Employees from Generation Y are flexible and open to challenges, training, and mentoring (Brdulak, 2014; Mazur-Wierzbicka, 2019). They are unafraid of changes and quickly adapt to new situations (Gadomska-Lila, 2015). They prefer teamwork and are very effective in a multicultural work environment (Suwa, 2014). They value open, assertive communication and freedom of speech. They communicate primarily through social media and messaging apps. This stems from their great need to contact other people and constantly share information. They want to participate in creating the company's strategy and engage in organisational matters. They need to participate in ambitious projects, and they expect quick feedback on the effects of their actions (Dziadkiewicz & Kłos, 2013; Gadomska-Lila, 2015; Smolbik--Jęczmień & Żarczyńska-Dobiesz, 2017).

Generation Y was the first generation to grow up in the digital era. As a result, they possess a high level of proficiency in using modern technologies and use them daily. These people use social media, search for information on the Internet, and

work in environments where technology is critical. They cannot function without the Internet, e-mails, and mobile phones, and their presence in the virtual world is integral to their lives. Digital language and technology are almost their first language. They are technological "natives" compared to the Baby Boomer "digital immigrants" who migrate to the latest technology (Prensky, 2001; Suwa, 2014).

It is worth noting that in the literature on the subject, attention is drawn to the fact that Generation Y is internally diverse. Deloitte distinguishes six categories of individuals among its representatives who differ in their approaches to work and career. These are individuals who consider job and career as overriding values (work-oriented, demanding, seeking meaning) and those who assign them a low position in the value system, rating their worth in the job market poorly (avoidant, careless, and distant) (Smolbik-Jęczmień, 2017).

3. Methodology

The main article's purpose is to identify the experiences of Generation Y employees of remote work under the conditions of COVID-19 and to identify the key factors that, in their opinion, favour or limit its effectiveness and efficiency. The authors formulated the following research questions:

RQ1. What activities in work management have employers undertaken in connection with the transition to home office?

RQ2. What factors influenced the actions taken by employees from Generation Y during remote work?

RQ3. Which factors were considered to facilitate remote work, and which hindered performance?

RQ4. In which of the analysed modes of work areas were their answers most consistent?

The research was carried out in the second quarter of 2022 and covered the entire territory of Poland[1]. The current research was preceded by a pilot study among representatives of the Z Generation in the first quarter of 2022 (Żarczyńska--Dobiesz *et al.*, 2022)[2]. It was a diagnostic survey using the survey technique and a tool, which was a survey questionnaire conducted using the CAWI method. The questionnaire contained closed questions about the nature of a disjunctive and conjunctive cafeteria. The range of respondents was selected within socio--demographic parameters reflecting the distribution of these features in the general

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[1] The results of empirical research presented in the article are part of the research conducted by the authors. The target sample was 690 respondents representing four generations (BB, X, Y, and Z).

[2] The research instrument used for this article is an extension of that used in the pilot study. It was adapted to the specificity of four generations and their experiences in remote work.

population. The selection of the sample was intentional, and the respondents were only professionally active people working remotely during the pandemic. Correctly completed questionnaires by 304 respondents qualified for the analysis. The questionnaire was based on two measurement scales: ordinal on the Likert scale and nominal (binary and categorical).

As part of the statistical analysis, frequency, and percentage statistics were used for nominal variables. For variables on the Likert scale, measures of descriptive statistics were used. Moreover, hierarchical clustering analysis was used as part of the conducted research. It allowed the grouping of the respondents' most frequently coherent answers regarding the analysed subject matter. In the hierarchical model, due to the nominal nature of the variables – there are responses to individual questions – a cosine similarity measure was applied to analyse the similarity between different response vectors. The studied issue consists of "n" questions, with responses on a scale of 0 and 1. The number of indicated questions, i.e., "n" forms a feature vector with binary values. Consequently, the similarity pertains to the most similar vectors, allowing the grouping of the space into subsets of statements where the value 1 is most likely. For their graphical presentation, dendrograms were used. The characteristics of the research sample are presented in Table 1.

Table 1. Descriptive Statistics of the Research Sample

Characteristics Controlled in the Study		n	%
Gender	female	142	46.7
	male	162	53.3
Residence	country	51	16.78
	small town (population below 20k)	54	17.76
	mid-size town (population between 20k and 100k)	66	21.71
	big city (population over 100k)	133	43.75
Business sector	commerce	45	14.8
	production	64	21.1
	services	137	45.1
	public institution/office	35	11.5
	other	23	7.6
The size of the organisation	micro (less than 10 employees)	49	16.1
	small (from 10 to 49 employees)	85	28.0
	medium (50 to 249 employees)	82	27.0
	large (over 249 employees)	88	28.9

Table 1 cnt'd

Characteristics Controlled in the Study		*n*	%
Children	no children	41	13.5
	one child	101	33.2
	two children	119	39.1
	three children	36	11.8
	four or more children	7	2.3
Home conditions	apartment in a block of flats/house	201	66.12
	house	103	33.88
Separate room	yes	101	33.22
	no	117	38.49
	sometimes yes, sometimes not	86	28.29
Pets (dog, cat)	yes	179	58.9
	no	125	41.1

Source: the authors, based on conducted research.

In total, 304 people participated in the study, of which 53.3% were men. Respondents are residents of towns and cities of various sizes. The most significant percentage of them: work in the service sector (45.1%), are employed in a large (28.9%) or small company (28.0%), have two children (39.1%), live in an apartment in block of flats (66.12%), during a period of remote work did not have a separate room to work (38.49%), and they were pet owners (58.9%). Quantitative research was supplemented by qualitative research – unstructured interviews, conducted with HR Business Partners representing the surveyed companies to identify their perspective on the analysed problem. Eight interviews were conducted.

4. Results

The first question addressed to the respondents concerned recognising their opinions on the actions taken by the employer in connection with the pandemic – 13 statements were verified (Table 2).

Table 2. Descriptive Statistics on Actions Taken by Employers in Connection with the Pandemic Situation

Statement		*n*	%
1. Has the industry in which you work been directly affected by the COVID-19 restrictions?	yes	183	60.2
	no	100	32.9
	I do not know	21	6.9

Table 2 cnt'd

Statement		n	%
2. Was the company in which you are employed prepared for the transition to remote work?	yes	187	61.5
	no	100	32.9
	I do not know	17	5.6
3. Has the company in which you are employed quickly implemented solutions enabling remote work?	yes	234	77.0
	no	54	17.8
	I do not know	16	5.3
4. Has the employer provided an adequate material working environment for remote work (necessary equipment, Internet connection)?	yes	188	61.8
	no	101	33.2
	I do not know	15	4.9
5. Did the employer interfere with the way employees organise their work while working remotely?	yes	109	35.9
	no	176	57.9
	I do not know	19	6.3
6. Has the employer implemented additional forms of control related to remote work?	yes	93	30.6
	no	187	61.5
	I do not know	24	7.9
7. Did the employer inform you about the organisation's situation during the pandemic?	yes	210	69.1
	no	78	25.7
	I do not know	16	5.3
8. Has the employer adapted the incentive package to the pandemic situation?	yes	88	28.9
	no	173	56.9
	I do not know	43	14.1
9. Has the employer attempted to integrate people working remotely?	yes	107	35.2
	no	167	54.9
	I do not know	30	9.9
10. Did the employer encourage its employees to be physically active?	yes	86	28.3
	no	192	63.2
	I do not know	26	8.6
11. Did the employer provide psycho-social support to its employees during the lockdown?	yes	95	31.3
	no	183	60.2
	I do not know	26	8.6
12. Has the organisation you work for made cuts during the pandemic?	yes	84	27.6
	no	185	60.9
	I do not know	35	11.5
13. Have there been new jobs related to work during a pandemic created in the company you work for?	yes	62	20.4
	no	199	65.5
	I do not know	43	14.1

Source: the authors, based on conducted research.

Nearly 2/3 of the respondents admitted that the industry in which they work was directly affected by the restrictions related to COVID-19 (60.2%). Nevertheless, most respondents stated that the employer did not decide to reduce jobs (60.9%). A similar percentage of respondents declared that the company was prepared to transition to remote work mode (61.5%) and quickly implemented solutions enabling it to start (77.0%). Due to the change in the work mode, most of them admitted that the employer provided them with a suitable material working environment to enable remote work (61.8%). In the opinion of over 2/3 of the respondents, it also kept employees informed about the situation in the company (69.1%). According to most respondents, the employer did not directly interfere in the organisation of employees' working time during remote work (57.9%) and did not implement additional forms of control, for example, working time (61.5%).

Apart from the above-mentioned positive actions of the employer, the respondents also pointed out the negative aspects. Over half of them admitted that the employer did not provide employees with psychosocial support during the lockdown (60.2%) or did not encourage them to undertake physical activity (63.2%). Only one in three of them declared that the employer attempted to integrate people working remotely (35.2%). A similar, relatively low percentage of survey participants stated that the employer adapted the package of incentives to the pandemic situation (28.9%).

The above results were indirectly confirmed as part of the hierarchical cluster analysis methodology (Fig. 1). It was found that respondents' most consistent responses concerned situations where the employer did not provide employees with psychosocial support and did not encourage them to be physically active. Another consistency concerns the employer's lack of interference in the organisation of working time and the lack of additional forms of control. The last identified significant consistency concerns the situation where companies that quickly implemented remote work had already been prepared for it.

Another issue addressed in the conducted study was identifying factors that conditioned the actions taken by employees from Generation Y during remote work. Employees verified 17 statements regarding selected aspects related to their work during the pandemic, and 11 aspects assessed employees' physical and mental health (Tables 3 and 4).

When analysing the obtained results, it is worth emphasising that nearly 2/3 of the respondents had not yet had the opportunity to work remotely (62.5%) – it was their first experience. Working in this new mode did not cause significant concerns related to dismissal for most employees (66.4%).

Despite the changes in the operating mode, nearly 3/4 of representatives of Generation Y did not feel stressed (70.4%). The change also did not lead to a decrease in their commitment (61.1%) and work efficiency (60.3%). Although every second respondent's employer required work in strictly defined hours (49.0%),

A_1. Has the industry in which you work been directly affected by the COVID-19 restrictions?

A_2. Was the company in which you are employed prepared for the transition to remote work?

A_3. Has the company in which you are employed quickly implemented solutions enabling remote work?

A_4. Has the employer provided an adequate material working environment for remote work (necessary equipment, Internet connection)?

A_5. Did the employer interfere with the way employees organise their work while working remotely?

A_6. Has the employer implemented additional forms of control related to remote work?

A_7. Did the employer inform you about the organisation's situation during the pandemic?

A_8. Has the employer adapted the incentive package to the pandemic situation?

A_9. Has the employer attempted to integrate people working remotely?

A_10. Did the employer encourage its employees to be physically active?

A_11. Did the employer provide psychosocial support to its employees during the lockdown?

A_12. Has the organisation you work for made cuts during the pandemic?

A_13. Have there been new jobs related to work during a pandemic created in the company you work for?
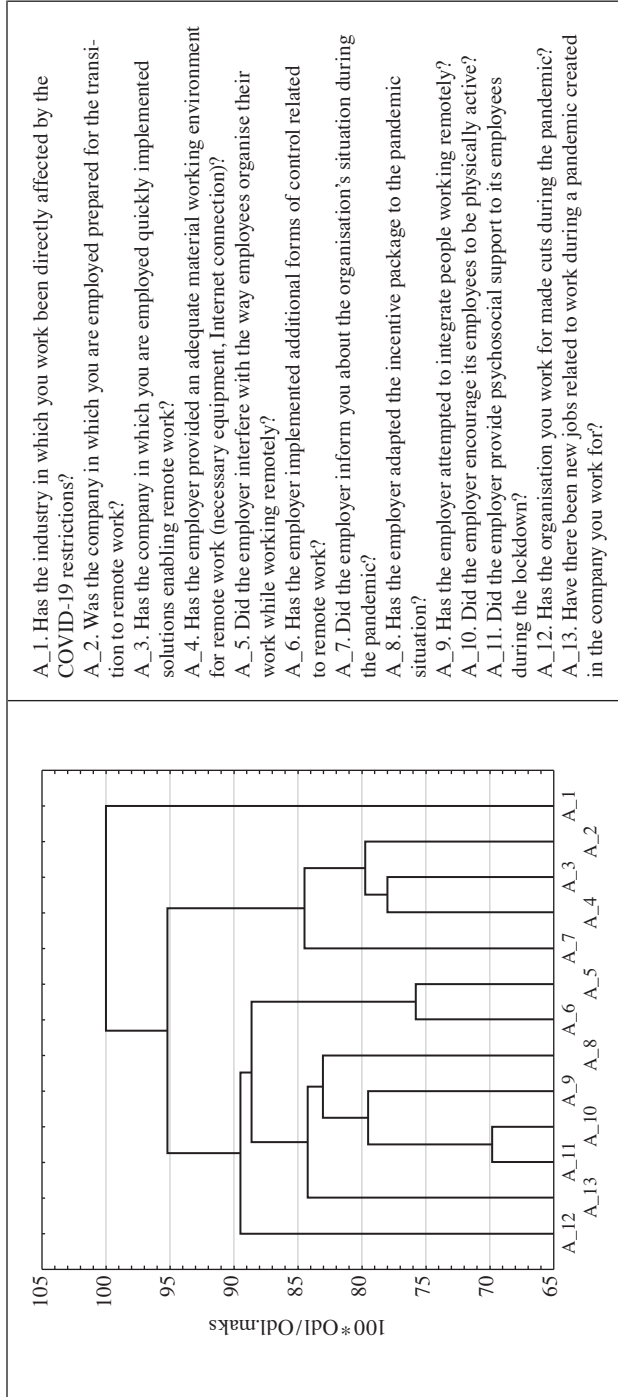
Fig. 1. Hierarchical Clustering Analysis for Questions Regarding Actions Taken by the Employer in Connection with Their Transition to the Remote Work Mode

Source: the authors, based on conducted research.

it was accompanied by freedom regarding its organisation (65.8%). Employees did not feel increased control (73.7%), but one in three of them admitted that they have had to look for ways to "bypass" it (34.4%).

Table 3. Descriptive Statistics on the Employee and Their Work in Connection with the Pandemic Situation

Statement		*n*	*%*
1. Did you have the opportunity to work remotely before the COVID-19 pandemic?	yes	104	34.2
	no	190	62.5
	I do not know	10	3.3
2. Was remote work your first job (no comparison to stationary work)?	yes	94	47.0
	no	90	45.0
	I do not know	16	8.0
3. Did you feel more stress when working remotely than when working at the organisation's premises?	yes	72	23.7
	no	214	70.4
	I do not know	18	5.9
4. Were you afraid of being fired while working remotely?	yes	81	26.6
	no	202	66.4
	I do not know	21	6.9
5. Did your immediate supervisor ask about your well-being during the lockdown?	yes	109	35.9
	no	174	57.2
	I do not know	21	6.9
6. Did your employer require you to work specific hours?	yes	149	49.0
	no	141	46.4
	I do not know	14	4.6
7. Have you ever dealt with private matters during the declared working time?	yes	164	53.9
	no	126	41.4
	I do not know	14	4.6
8. Did your employer give you the freedom to organise your work?	yes	200	65.8
	no	80	26.3
	I do not know	24	7.9
9. Did you sense more supervision from your employer when you switched to remote work?	yes	64	21.1
	no	224	73.7
	I do not know	16	5.3
10. Have you looked for ways to "bypass" this control?	yes	22	34.4
	no	36	56.3
	I do not know	6	9.4

Table 3 cnt'd

Statement		n	%
11. Has your commitment/motivation to work remotely increased?	yes	119	39.1
	no	149	49.0
	I do not know	36	11.8
12. Has your commitment/motivation to work remotely decreased?	yes	45	24.3
	no	113	61.1
	I do not know	27	14.6
13. Has the efficiency of your remote work increased?	yes	130	42.8
	no	129	42.4
	I do not know	45	14.8
14. Has the efficiency of your remote work decreased?	yes	42	24.1
	no	105	60.3
	I do not know	27	15.5
15. Has your family situation (e.g. children, animals at home) reduced the effectiveness of your work?	yes	114	37.5
	no	174	57.2
	I do not know	16	5.3
16. Has the number of household responsibilities made it difficult for you to fulfil your professional duties?	yes	99	32.6
	no	195	64.1
	I do not know	10	3.3
17. Have the operating costs of your household related to your remote work increased?	yes	124	40.8
	no	145	47.7
	I do not know	35	11.5

Source: the authors, based on conducted research.

Table 4. Descriptive Statistics on Employee Health in Connection with Remote Work during the Pandemic

Statement		n	%
1. Have you noticed a general deterioration of your physical health while working remotely (e.g. weaker physical condition, feeling tired / weight gain)?	yes	130	42.8
	no	150	49.3
	I do not know	24	7.9
2. Have you noticed a deterioration in your mental health while working remotely (e.g. mood swings, depression, loss of meaning in life)?	yes	123	40.5
	no	159	52.3
	I do not know	22	7.2
3. Have you started to experience existential dread while working remotely (e.g. "what will happen to us in a month, a year")?	yes	98	32.2
	no	173	56.9
	I do not know	33	10.9

Table 4 cnt'd

Statement		n	%
4. Have you noticed problems with concentration and attention span while working remotely?	yes	107	35.2
	no	175	57.6
	I do not know	22	7.2
5. Did you pay attention to your clothes while working remotely?	yes	68	22.4
	no	216	71.1
	I do not know	20	6.6
6. Have you experienced intense conflicts with people from your intimate environment while working remotely?	yes	82	27.0
	no	197	64.8
	I do not know	25	8.2
7. Have you used stimulants more often while working remotely (alcohol, cigarettes, etc.)?	yes	54	17.8
	no	226	74.3
	I do not know	24	7.9
8. Have you tried to introduce a well-balanced diet while working remotely?	yes	119	39.1
	no	157	51.6
	I do not know	28	9.2
9. Have you tried to introduce physical activity while working remotely?	yes	148	48.7
	no	133	43.8
	I do not know	23	7.6
10. Have you worked remotely despite illness?	yes	163	53.6
	no	117	38.5
	I do not know	24	7.9
11. Did you take on work despite illness more often than during stationary work?	yes	90	55.2
	no	59	36.2
	I do not know	14	8.6

Source: the authors, based on conducted research.

Attitudes of employers meant that only half of the surveyed employees could combine professional work with private matters (53.9%). For the majority of respondents, there are objective impediments to their home office. As many as 37.5% of them stated that their work efficiency was reduced by home-schooled children and additional household duties (32.6%). Analysing the costs of operating a household during remote work, it is found that, in the opinion of 40% of represent-atives of Generation Y (40.8%), these costs have increased.

Examining the results obtained using hierarchical cluster analysis, it can be seen that two questions produced the most consistent responses (Fig. 2). The first was when the employer required the respondents to work strictly defined hours, which
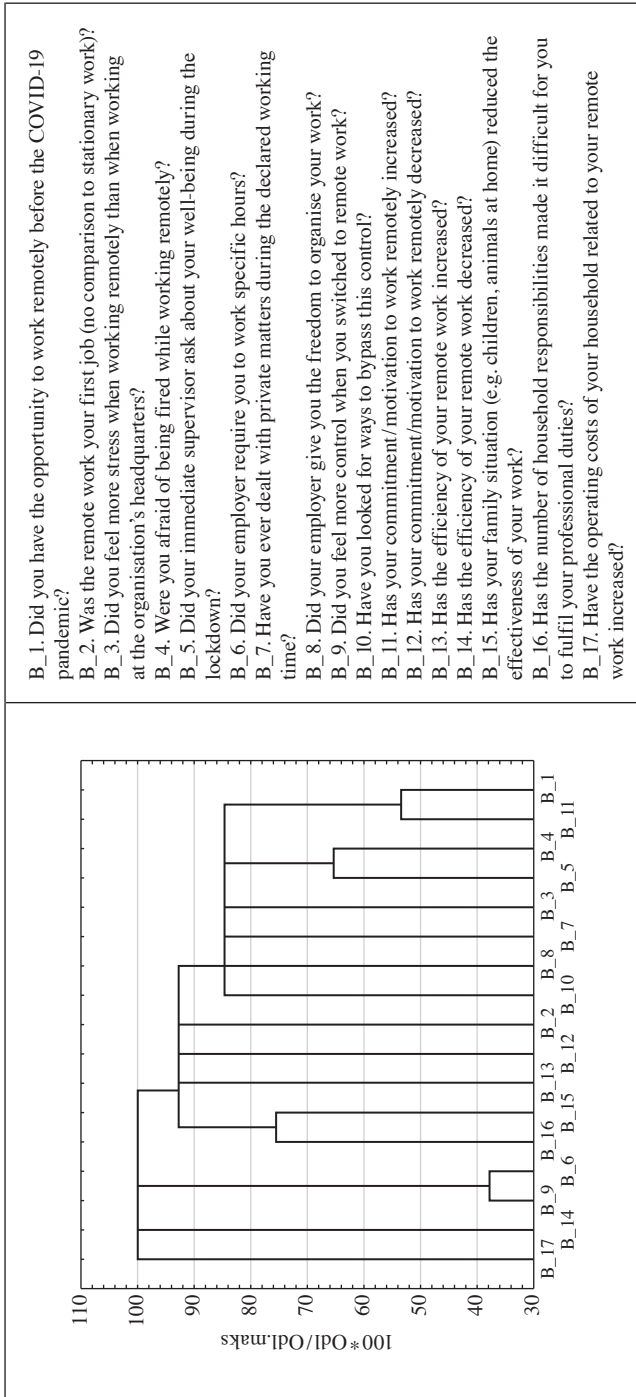
B_1. Did you have the opportunity to work remotely before the COVID-19 pandemic?
B_2. Was the remote work your first job (no comparison to stationary work)?
B_3. Did you feel more stress when working remotely than when working at the organisation's headquarters?
B_4. Were you afraid of being fired while working remotely?
B_5. Did your immediate supervisor ask about your well-being during the lockdown?
B_6. Did your employer require you to work specific hours?
B_7. Have you ever dealt with private matters during the declared working time?
B_8. Did your employer give you the freedom to organise your work?
B_9. Did you feel more control when you switched to remote work?
B_10. Have you looked for ways to bypass this control?
B_11. Has your commitment/motivation to work remotely increased?
B_12. Has your commitment/motivation to work remotely decreased?
B_13. Has the efficiency of your remote work increased?
B_14. Has the efficiency of your remote work decreased?
B_15. Has your family situation (e.g. children, animals at home) reduced the effectiveness of your work?
B_16. Has the number of household responsibilities made it difficult for you to fulfil your professional duties?
B_17. Have the operating costs of your household related to your remote work increased?

Fig. 2. Hierarchical Cluster Analysis for Questions about the Employee and Their Work in Connection with Their Transition to Remote Work

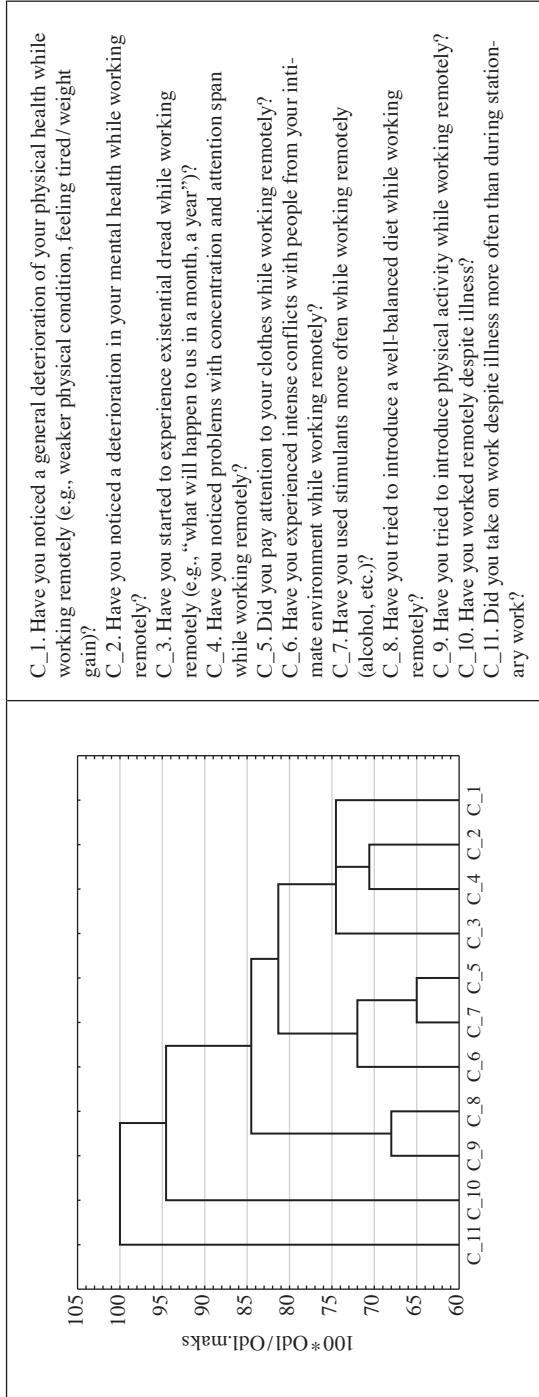Source: the authors, based on conducted research.

C_1. Have you noticed a general deterioration of your physical health while working remotely (e.g., weaker physical condition, feeling tired / weight gain)?

C_2. Have you noticed a deterioration in your mental health while working remotely?

C_3. Have you started to experience existential dread while working remotely (e.g., "what will happen to us in a month, a year")?

C_4. Have you noticed problems with concentration and attention span while working remotely?

C_5. Did you pay attention to your clothes while working remotely?

C_6. Have you experienced intense conflicts with people from your intimate environment while working remotely?

C_7. Have you used stimulants more often while working remotely (alcohol, etc.)?

C_8. Have you tried to introduce a well-balanced diet while working remotely?

C_9. Have you tried to introduce physical activity while working remotely?

C_10. Have you worked remotely despite illness?

C_11. Did you take on work despite illness more often than during stationary work?

Fig. 3. Hierarchical Cluster Analysis for Questions about Employee Health Related to Their Transition to the Remote Work Mode

Source: the authors, based on conducted research.

made them feel more in control. The second situation was when employees who had the opportunity to work remotely before the pandemic experienced an increase in their level of commitment more often than other employees.

Analysis of respondents' replies to questions about their physical and mental health shows that, in their opinion, the pandemic has affected both their physical (42.8%) and mental (40.5%) health, with as many as one in three experiencing problems with concentration and attention span while working remotely (35.2%) and even existential dread while working remotely (32.3%). However, every second respondent denied such adverse effects of remote work on their health. Against the background of the above results, a few issues are worth highlighting. As many as 70% of the respondents did not pay attention to their clothes while working remotely (71.1%) – which might seem understandable. Almost every second surveyed person tried to introduce physical activity (48.7%), but nearly 2/5 tried to introduce a well-balanced diet (39.1%). It is also worth noting that remote work, despite the related distractions, in the opinion of as many as 2/3 of the respondents, did not significantly impact intense conflicts with people in their intimate environment (64.8%), nor did it encourage more frequent use of stimulants (74.3%). Because of the above, it is worth emphasising that as many as every second person worked despite illness (53.6%). More than half of the respondents admitted that such a situation occurred more often than when doing stationary work (55.2%).

Analysing the obtained results with the use of hierarchical cluster analysis, it is found that the strongest correlations between respondents' answers concerned:
– reaching for stimulants with paying attention to clothes while working remotely,
– introduction of a balanced diet with undertaking physical activity,
– deterioration in mental health with simultaneous lack of concentration (Fig. 3).

The following issues concerned the respondents' assessment of the advantages and limitations of remote work. Analysing the results, it is concluded that employees from Generation Y largely perceive such a mode of work as an overall positive (Table 5).

Table 5. Descriptive Statistics on the Potential Advantages of Remote Work

The Potential Advantages of Working Remotely	Mean (*M*)	Median	Standard Deviation
1. Development of IT competencies (use of applications for remote work, e.g. MS Teams, Zoom)	3.46	4.00	1.08
2. Saving time spent commuting	4.09	4.00	1.10
3. Ability to work from anywhere	3.89	4.00	1.10
4. More effective work due to the lack of distractions	3.27	3.00	1.16
5. Lack of direct contact with co-workers, superiors, and clients	3.19	3.00	1.13

Table 5 cnt'd

The Potential Advantages of Working Remotely	Mean (*M*)	Median	Standard Deviation
6. Greater freedom and independence at work	3.83	4.00	0.96
7. Ability to flexibly decide on working hours	3.65	4.00	1.12
8. Being able to spend more time at home	3.83	4.00	1.03
9. Ability to reconcile various activities – work, home, family, time for yourself, etc.	3.76	4.00	1.05

Source: the authors, based on conducted research.

Table 6. Descriptive Statistics on Potential Limitations of Remote Work

The Potential Limitations of Working Remotely	Mean (*M*)	Median	Standard Deviation
1. Lack of free space in the apartment/house allowing for unrestricted work	2.86	3.00	1.32
2. Internet connection instability	2.72	2.00	1.32
3. Lack of necessary tools for work (laptop, speaker, microphone, etc.)	2.53	2.00	1.30
4. Unexpected activation of the camera, microphone	2.33	2.00	1.19
5. Spending a lot of time in front of a computer	3.32	4.00	1.27
6. Less opportunity to receive support from colleagues in case of problems	3.13	3.00	1.20
7. Excessive contact from the employer regarding professional topics after working hours	2.48	2.00	1.22
8. Unscheduled assignment of additional work tasks after working hours	2.56	2.00	1.20
9. Difficulty managing your own time	2.89	3.00	1.22
10. Difficulties in reconciling professional work with home and family duties	2.79	3.00	1.20
11. Increase in costs incurred in connection with remote work	3.09	3.00	1.21
12. Unforeseen distractions (e.g. children, pets, renovations)	3.11	3.00	1.26

Source: the authors, based on conducted research.

The nine potential advantages of remote work were verified. As many as six received an average weight of at least $M = 3.6$. Respondents appreciated, above all: saving the time spent commuting ($M = 4.09$), the ability to work from anywhere ($M = 3.89$), spending more time at home ($M = 3.83$), reconciling various activities (work, home, family, time for yourself) ($M = 3.76$), greater freedom and independence ($M = 3.83$) and the possibility of flexible decision-making about working hours

($M = 3.65$). Only slightly lower indications concerned: development of IT competencies ($M = 3.46$), effective work related to the lack of distractions ($M = 3.27$), and lack of direct contact with colleagues ($M = 3.19$). When analysing the limitations of remote work indicated by the respondents, out of 12 potential disadvantages subjected to verification, they indicated only three – spending a lot of time in front of a computer ($M = 3.32$), limited support from colleagues ($M = 3.13$), and an increase in overall home office costs ($M = 3.09$) (Table 6). Other disadvantages are less important for employees ($M < 3$).

5. Conclusions

Remote work has been attracting interest from both employers and employees for several years. This work mode was met with caution and even fear by many, but the COVID-19 pandemic did two things: it fast-tracked the ongoing trend of remote work and its technologies becoming a lasting force for transformation of organisations (Hadidi & Power, 2020), and it compelled the labour market players to deal with the relevant challenges.

Since the pandemic work done in the office and work done at home has become unified. Remote work has become the norm, accepted as current and future practice, and used daily in communication with the outside world and relations within enterprises[3]. The period of experimentation is over. For many sectors, remote work is already the standard model due to the expectations of job applicants and employees, and business efficiency. A home office is another challenge for managers, but also a dilemma – can they manage themselves and their employees in this remote space? In a space that creates various threats, new habits, and procedures that may shortly become a management model. Radłowski (2022) accurately asks the question: Where am I now, at home or work?

The aim of the article was to present the experiences of Generation Y employees working remotely during the pandemic. Based on the conducted empirical research, it has been concluded that Generation Y has adapted quite well to remote work, moreover they assessed the actions of companies related to the transition to remote work positively. This may be because this generation has grown up in the age of the Internet and remote work and, therefore, is involved in their work irrespective of the physical location (Hampel & Hampel, 2023).

Even though Millennials emphasise many advantages of remote work, they also indicate the disadvantages of this form of work. As they are a generation that cares

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[3] The amendment to the Labour Code, which entered into force on April 7 2023, repeals the existing provisions on teleworking. The new regulations include introducing a definition of remote work, which may be performed entirely or partially outside the employer's premises (Act of 26 June 1974 – Labour Code; Journal of Laws of 2023, item 1465).

about work-life balance and good organisation of their work, they needed clear home office rules. They need a clear contract before starting remote work, including precise set working hours that will allow them to optimally plan other activities that are important to them. During the pandemic, these conditions were not fully defined, and therefore the Y's were sceptical about continuing to work from home. They were the ones who longed for more amenities in the workplace. Whenever possible, they tried to work at the company's headquarters. Then they could use the office space with the necessary work equipment, an essential element of building a personal brand for this generation. The above conclusions were also confirmed by interviews conducted with HR Business Partners (HR BPs). In their opinion, Gen Yers felt tired and overworked during the pandemic. This situation resulted directly from the many roles that required a lot of commitment from them during this difficult time. The pandemic situation affected both their physical and mental health. Other authors also support this, that younger generations experienced at that time more psychological distress than other generations (GfK, 2020; Vacchiano, 2023). As emphasised in the conducted interviews with HR BPs, the pandemic negatively impacted women from Generation Y. They pointed to significant difficulties in managing one's own time during the home office period. Combining professional duties with caring for children, their school – was sometimes beyond their capabilities[4]. In addition, women of the analysed generation feared dismissal after returning to stationary work. In order to minimise their sense of danger related to losing their job, they tried to be available 24/7 and to work despite illness. Therefore, they noticed a decline in their motivation and commitment to work. They also declared their willingness to return to relative "normality" more often than men, pointing to the importance of direct relationships with colleagues.

In summary, organisations today have significantly rationalised their online activities based on the experience gained. They have implemented security procedures, taken up challenges related to reducing the costs of their operations, and consciously resigned from significant investments. Plans for the future are rarely discussed, and managers remain humble in their ability to predict and shape the future of their companies. When asked about the future of remote work, the respondents most often point to the hybrid model. Such a model offers partial cost reductions and the increased flexibility so desired today, while maintaining the relational elements typical of stationary work (Obłój *et al*., 2020). What employers,

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[4] The answer to the changing trends in the labour market and the related needs of employees is the amendment of the Labour Code and some acts, namely the implementation of the provisions of two directives into the Polish legal code – the so-called parental directive and work-life balance, introducing solutions to help working parents reconcile work and family life – enabling the so-called "flexible work organisation" and the introduction of additional breaks as part of working time. The new regulations came into force on April 26, 2023.

leaders, and human resource teams should take care of is working on employee motivation, their commitment, strengthening broken ties with the company, and post-pandemic stress. They should be more thoughtful about the risks and challenges employees face, especially when working from home. They must ensure employees are adequately equipped with the relevant resources and support to perform their jobs more effectively.

The authors intend to continue their research on the indicated topic and the adaptability to remote work of employees from other generations present in the labour market. Due to the limitations of the research sample, it is essential to underline that generalising the research results must be done with caution.

Authors' Contribution

The authors' individual contribution is as follows: Each contributed a third.

Conflict of Interest

The authors declare no conflict of interest.

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Employee Retention Factors: The Perspective of Employees and Managers

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ABSTRACT

Objective: The article identifies and explores differences in how employees and managers assess the importance of retention factors. It also looks at predictors of the importance employees attach to these factors.

Research Design & Methods: Literature studies and quantitative empirical research were carried out with CAWI. The research questionnaire included a self-designed WCR form and the MQSS-JSS scale.

Findings: Employees and managers differ in how they assess the importance of retention factors. Managers tend to underestimate the importance of individual factors. All of the predictors studied – company size, job satisfaction, age, gender and seniority – proved important in assessing the importance of the factors tested.

Implications/Recommendations: Research results indicate the importance of personalisation in retention strategies. Effective retention strategies should take the predictors of the importance of specific factors for employees into account.

Contribution: Managers' tendency to underestimate the importance of retention factors has been revealed and it has been shown that the individual and organisational features tested are important predictors of factor selection in retention strategies.

1. Introduction

The weakening bond between employees and organisations, and the lability of their engagement are important issues facing modern managers. This phenomenon leads to numerous departures and organisational losses in human capital. When employees leave an organisation, they take their knowledge, experience, culture, and values with them. This can significantly endanger the organisation's competitiveness, especially when the departures involve employees with high potential.

According to a report published by the Polish-British Chamber of Commerce (Paździor, 2020), the effect of retention issues on the Polish labour market is evaluated on average at 5.85 on a scale of 1 to 10. High resignation numbers do not have any positive effect on a company's image and could contribute to unfavourable opinions among prospective employees and customers. The high costs of recruiting and hiring new employees must be noted. It is estimated that hiring a new employee, depending on the position, costs from 90% to 200% of the employee's annual earnings (Rubenstein *et al*., 2017).

The post-pandemic Great Resignation (Kulisz, 2022) and subsequent phenomenon of Quiet Quitting (Klotz & Bolino, 2022) have complicated the issue of retention by giving it new dimensions. In the end, both phenomena weaken the bond between organisation and individual by significantly disturbing the effectiveness of its operation.

Looking for the factors essential in building an effective management strategy for employee retention, the article looks at the differences between employees and their managers and evaluates the significance of the retention factors and the predictors of the significance assigned to these factors by employees. The paper presents the results of a literature review, the methodology used, and the results of the authors' own empirical study, then discusses conclusions and recommendations for the managerial practice in employee retention. The study and its outcome have demonstrated that the question on employee retention has still not been fully explored by researchers.

2. Literature Review

The term "employee retention" is defined in many ways. Generally speaking, it involves organisations taking measures to encourage employees to stay with them for longer. These measures address the needs and priorities of employees. Employee retention is supposed to help the organisation achieve its strategic goals. Retention strategies are developed to verify the reasons employees leave the organisation, and the factors that increase employee dissatisfaction, which could, directly or indirectly, impact the retention of devoted and loyal employees (Rakhra, 2018).

Studies on employee retention (Eldridge & Nisar, 2011) describe three main types of challenges related to employee retention:

1) navigating strong competition between organisations related to a restricted pool of talented employees; believing that having a strong market position depends to a large extent on these employees,

2) a share of the human capital will emigrate to other countries which offer more favourable working and salary conditions,

3) predicting employees' future requirements is difficult. This can lead to a failure to undertake sufficient corrective measures in employee–organisation relations.

As a consequence of the third issue, significant dissatisfaction is observed among employees in terms of satisfying their needs and expectations. The researchers present a range of factors that lead to dissatisfaction. Both Sinha and Sinha (2012) and Mehta, Kurbetti and Dhankhar (2014) uncovered a wide range of such factors, and demonstrated that those employees find important at one organisation may not be by those of another.

In their examination of employees' reasons for quitting, Dutta and Banerjee (2014) observed that the lack of courses and professional career development options, and the failure to recognise skills, weakens the attachment employees have to their organisation. In a study aimed at identifying variables that affect employee turnover, Kossivi, Xu and Kalgora (2016) looked at factors including organisational culture, training courses, development, and autonomy.

On the other hand, the results of a study by Pandita and Kumar (2022) on changing practices in engaging employees demonstrate that the factor which stimulates the professional activity of Generation Z best is the perceived support from the supervisor. The positive relation between the long-term presence at the workplace and the perceived organisational support in maintaining the work-life balance, and the significance of the latter in the activities of the Y Generation specialists was verified by Fuchs, Morales and Timana (2021), as well as in research by Hassan *et al.* (2021).

Samuel and Chipunza (2009) observed that the internal motivational variables that significantly affect the retention of employees in both the public and private

sectors include training and development, a sense of affiliation (positive relations at work), work safety, interesting work, and the freedom to think innovatively (autonomy). Khan and Bhagat (2022) found that good communication and discrimination-free teamwork were also considered important. Galván Vela *et al.*'s (2022) analysis of the conditions which make employees feel good, performed on the basis of a systematic review of almost 400 Happiness Business documents, showed that employees that enjoy autonomy and the support of top management feel happy and manifest it at the workplace. The relationship between job satisfaction and employee retention was pointed out by Sharma, Mahendru and Singh (2010) .

In their study on employee retention in the IT sector, James and Mathew (2012) examined several retention strategies, including rewarding and recognition, training and development, career planning, flexible working time, results evaluation, financial support, mentoring and coaching, among others. Das and Baruah (2013) expanded the analysis by considering the importance of leadership style and work safety. Multiple researchers have found that training and development are among the most important retention factors (Silva, Amorim Carvalho & Dias, 2019; Yousuf & Siddqui, 2019; Martini, Gerosa & Cavenago, 2023). Silva, Amorim Carvalho and Dias (2019) considered company promotion policy, payrolls, additional benefits, appreciating good ideas, promoting a sustainable life, developing employee competences, open internal communication channels, and continuous training.

The wider effect of organisational culture on loyalty and retention was identified by Dunger (2023), with the most significant cultural dimensions being team cohesion, transition leadership, honesty and care.

Whilst foreign studies have observed a wide diversity of factors, Polish studies have uncovered a much narrower range. Moreover, analyses of factors that induce employees to stay with their companies for longer show that relatively few consider the perspective of both employees and managers. This prompts interesting questions: Does the significance assigned to retention factors differ among employees and managers? How do employers recognise the causes that lead employees to stay with their organisations for longer? Learning the answers could lead management to improve the employee retention process. These considerations lead to our first hypothesis:

H1: Employees and managers evaluate the importance of retention factors differently.

The importance assigned to specific retention factors disclosed in previous studies served as the premise for further analysis. This analysis focused on understanding the differences in how these factors are perceived. The literature review identified determinants of these differences, which were often related to the characteristics of the group surveyed. Factors considered important to employees of a specific generation or industry, for example, were highlighted. The literature

review prompted the question of whether employees' perceptions of the importance of retention factors depended on their own individual features and the characteristics of their organisations. It was assumed that effective retention strategies require a more comprehensive understanding of the importance employees assigned to the retention factors, which may include their age, gender, work satisfaction, seniority, or the size of their company. On this basis, another research hypothesis was formulated:

H2: The differences in how the retention factors are perceived are dependent on individual and organisational features, including age, gender, work satisfaction, seniority, and the size of the business.

3. Methodology and Characteristics of the Research

The purpose of the studies was to understand the differences between employees and their managers in evaluating the importance of the retention factors, and the predictors of the significance assigned to these factors by employees. To verify our two research hypotheses, we performed a quantitative study. We prepared a Selected Retention Factors (SRF) form and coupled it with the Michigan Organisational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS), a tool for evaluating global work satisfaction (Bowling & Hammond, 2008). Using a Likert's scale, respondents were asked to specify to what extent they agree with statements (for the MOAQ-JSS scale), and the significance they would assign to a factor (the SRF form). The respondents completed a questionnaire using CAWI technique.

Based on the literature review, observation of business solutions and pilot studies, a questionnaire was created. It included statements examining the evaluation of factors whose importance had been previously verified, but no comparison had been made in their evaluation between employees and managers (e.g., work atmosphere), as well as factors never before examined (e.g., psychological support). More measurable factors (e.g. remuneration increase, additional benefits), and those which affect the work conditions in a less measurable way, such as autonomy, were also taken into account. These factors were supplemented by factors that were important in Poland, where employees still worry about the stability of employment. The expectations towards equipment in the workplace, and flexible forms of working were also mentioned by younger employees. This information were acquired from a Monitor Rynku Pracy report (Randstad, 2023), as well as from studies by Sedlak & Sedlak (Pyzik, 2016).

On the basis of these studies, it was also concluded that though the communication between the employees and their managers that shapes the work atmosphere is important for both groups, employees continue to highlight the importance of trust in professional relations. This led us to separate the factor of experiencing

trust at the workplace in the SRF form. We assumed that our overall selection of factors would produce a more comprehensive picture of the appropriate selection of retention factors. The pilot study was intended to determine whether the factors planned in the survey were important enough to be included in the questionnaire and whether any important factors had been omitted. The pilot study confirmed the choice of factors (see Fig. 1)

The study covered 390 individuals. The sample selection was purposive and aimed at obtaining a wider range of opinions. Two groups were surveyed: 249 employees who had not changed their workplace in the previous six months, and middle level (two-thirds of the managers) and senior managers (a third). In the employee group, 69% were women and 31% men, and the majority were 26–40 years old. Services, IT, and finance were three main three industries involved, and large, medium, small, and micro-enterprises were all represented. The management group consisted of 141 individuals, including 51% women, and 49% men, and two-thirds were 31–50 years old. The managers were chosen on the basis of their employment seniority and were fairly evenly diversified: almost 20% had been in their position for 2 or fewer years, 20% had 2–5 years experience in their position, 26% had 5–10 years, 17% had 10–15 years, and 17% had been employed for more than 15 years. The correlations between the variables were studied using the chi-square test and Cramer's V.

4. Study Results

4.1. Retention Factors as Evaluated by Employees and Managers

Among important retention factors, the managers most often listed (in the following order): atmosphere at work, development options, and remuneration increases. However, only the work atmosphere was viewed as important by more than 80% of those surveyed. Employees cited the following as being the most important (in order): stability of employment, development options, and remuneration increases. More than 80% regarded the atmosphere at work, flexible working conditions, and trust as important (Fig. 1). All the factors mentioned in response to the open questions were listed once.

A comparison of the data obtained for both groups reveals that, although the sequence of different factors being specified is similar, not all managers appreciate their importance for employees. The only factor reported as important often in both groups was the work atmosphere. The largest differences were associated with the workplace equipment (a difference of 24%), benefits (20%), flexible working conditions (17%), and autonomy (16%). Therefore, comparing the hierarchy based on how often a given factor was mentioned by managers *versus* by employees demonstrates a significant number of differences.
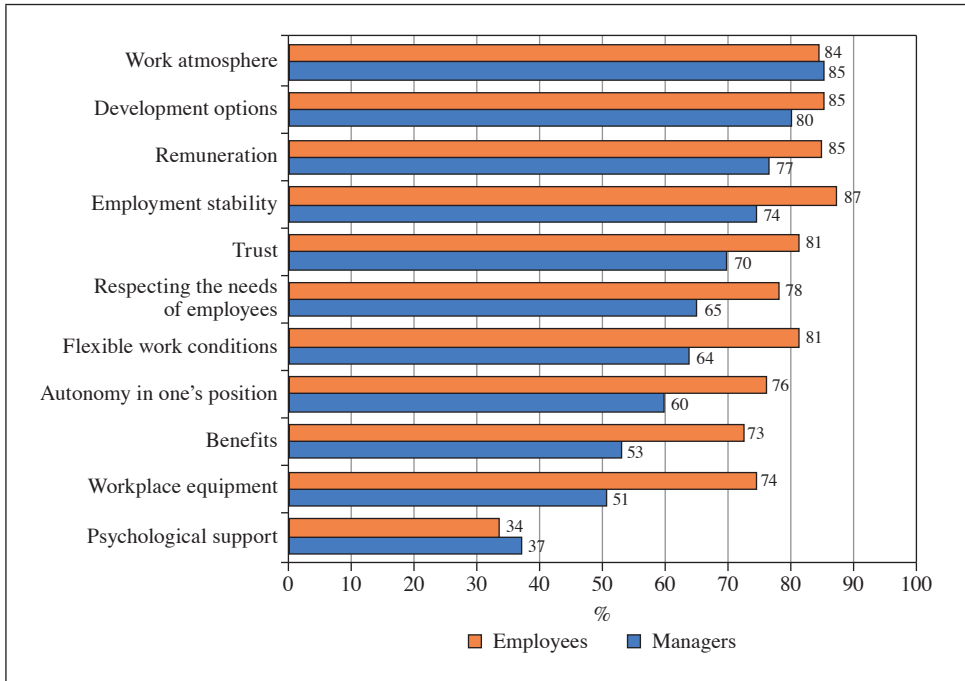
Fig. 1. Retention Factors Considered Important by Employees and Managers
Source: the authors.

4.2. Evaluation of the Importance of Retention Factors and Individual and Organisational Characteristics

A statistical analysis of the data also made it possible to verify the correlation between the individual and organisational qualities of employees and the evaluation of the importance of particular retention factors. In the study, the size of the organisation, employee satisfaction, age, gender, and seniority were taken into consideration. Table 1 shows the results, which enabled us to determine which retention factors are important for particular groups of the employees surveyed.

The study shows that the size of the organisation was the main factor influencing the respondents' answers. Statistically significant differences were found for almost all factors surveyed, except for workplace equipment and psychological support, which were rated similarly regardless of company size. Differences were observed in both the frequency and importance of specific factors. Respondents from large companies more frequently considered certain factors as important for deciding to stay with an organisation long-term. Over 85% of respondents from large companies rated the following as important: employment stability, development opportunities,

Małgorzata Adamska-Chudzińska, Justyna Pawlak

Table 1. Correlation Matrix between Evaluation of the Importance of Retention Factors and the Qualities Analysed

Specification	Work Satisfaction	The Size of the Business	Age	Sex	Seniority
Development options		19.7570 / 0.0030 / 0.2004			
Remuneration		20.6494 / 0.0020 / 0.2049	11.8110 / 0.0190 / 0.1549		8.2725 / 0.082 / 0.1297
Trust		24.1029 / 0.0000 / 0.2213		5.5500 / 0.0620 / 0.1502	
Psychological support	7.6203 / 0.1000 / 0.1245				
Respecting the needs of employees	14.1678 / 0.0070 / 0.1697	12.2437 / 0.0570 / 0.1578		9.9651 / 0.0070 / 0.2013	
Autonomy in one's position	19.1387 / 0.0010 / 0.1972	15.6959 / 0.0150 / 0.1786	20.5276 / 0.0000 / 0.2043		
Flexible work conditions		16.3739 / 0.0120 / 0.1824	8.9408 / 0.0630 / 0.1348	18.2516 / 0.0000 / 0.2724	
Employment stability		26.6222 / 0.0000 / 0.2326			
Workplace equipment				10.2610 / 0.0060 / 0.2042	
Work atmosphere		25.6275 / 0.0000 / 0.2282	7.8187 / 0.0980 / 0.1261		9.5309 / 0.049 / 0.1392
Benefits	10.8395 / 0.0280 / 0.1484	23.1993 / 0.0010 / 0.2171		11.8484 / 0.0030 / 0.2195	11.4835 / 0.022 / 0.1528

Source: the authors.

increased remuneration, work atmosphere, and flexible working conditions. In contrast, no factor was deemed significant by more than 80% of respondents from medium-sized companies. For this group, the most important factors were development opportunities, employment stability, and work atmosphere. Detailed results are shown in Figure 2.
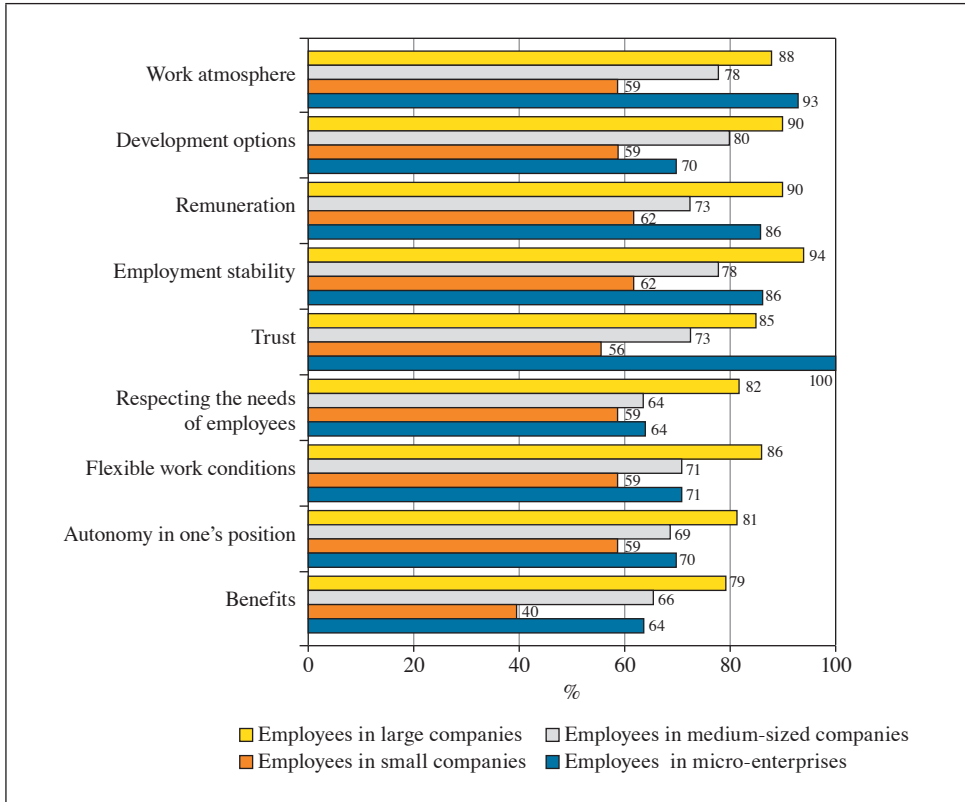
Fig. 2. Retention Factors Considered Important, by Company Size
Source: the authors.

Those from small companies assigned significance to any retention strategy factor less often than other groups. More than 60% of the answers highlighted remuneration and employment stability. On the other hand, like at their large counterparts, an increase in the frequency of particular factors specified as important increased at micro companies. This time, more than 85% of those highlighted were trusted in the workplace (100% indicated as much), work atmosphere, remuneration growth, and employment stability. Tellingly, all of the factors analysed in this group

were recognised as important more commonly than the factors found to be most important for the representatives of small companies. In micro companies, each of the factors acquired at least 64% of the answers, and in small enterprises the retention factor reported most frequently – employment stability – was indicated by only 62% of those surveyed.

The study on the relationship between satisfaction level and the particular factors demonstrated that it is statistically significantly correlated with autonomy, showing respect for the needs of employees, benefits, and psychological support (Fig. 3 and 4).
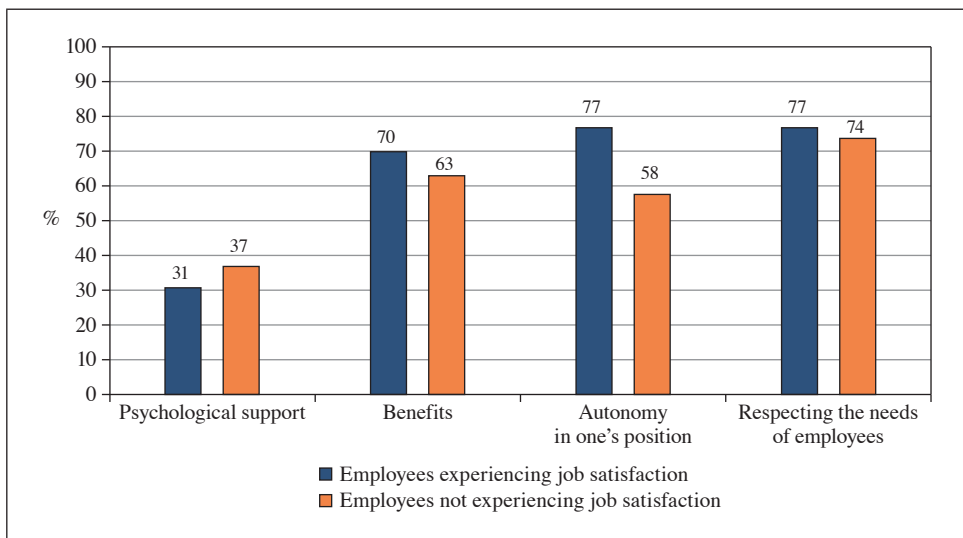
Fig. 3. Retention Factors Considered Important Depending on Degree of Satisfaction with Work
Source: the authors.

Generally, employees not satisfied with their job more often evaluated particular retention factors as insignificant for their longer bond with the organisation. The greatest difference was associated with autonomy. For employees who were satisfied with their job, 77% considered autonomy to be a significant factor, whilst only 6% claimed that being autonomous was not important in making decisions. And among dissatisfied employees, 58% regard autonomy as significant, whilst as many as 30% considered it insignificant. Similarly, more than a quarter of recognised respecting the needs of employees and benefits as irrelevant.

There is a statistically significant correlation between the age diversity of those surveyed and their feelings about the work atmosphere, remuneration, flexible work conditions, and autonomy at their work position (Fig. 5).
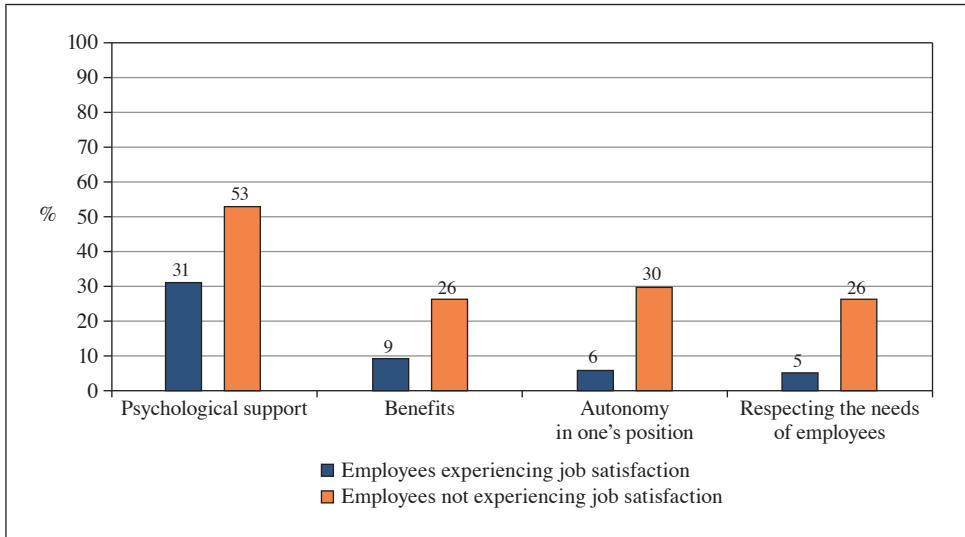
Fig. 4. Retention Factors Considered Unimportant Depending on Degree of Satisfaction with Work
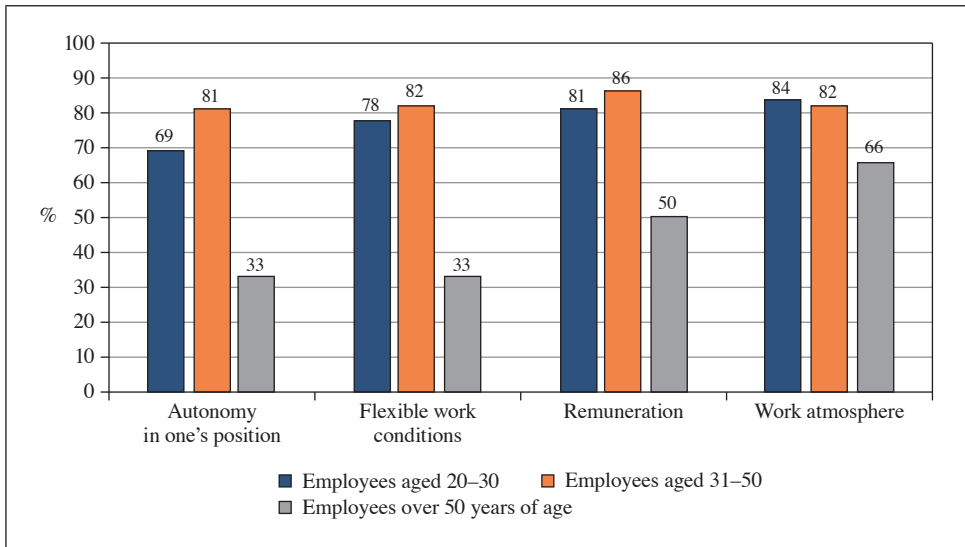
Source: the authors.

Fig. 5. Retention Factors Considered Important, by Age

Source: the authors.

Remuneration was most often recognised as important for long-term employment by the 31–50-year-old cohort (86%). It was considered important slightly less often by younger employees (81%), while only 50% of the oldest respondents saw it as important. Autonomy at work was also the most important factor to those in the middle-aged group (81%). Among the younger group, 69% considered it important, whilst only 33% of employees over 50 said the same, with 50% of them deeming it unimportant for staying with the organisation. Similarly, flexible work conditions were considered important by a considerable majority of young and middle-aged individuals, but less so by the oldest (only 33%). The work atmosphere was also more commonly considered important by the younger groups, though the differences were notably smaller than for autonomy and flexible work conditions.

Differences in how women and men saw the factors emerged for the following five factors: trust at the workplace, flexible work conditions, respects needs of employees, equipment in workplace, and benefits (Fig. 6).
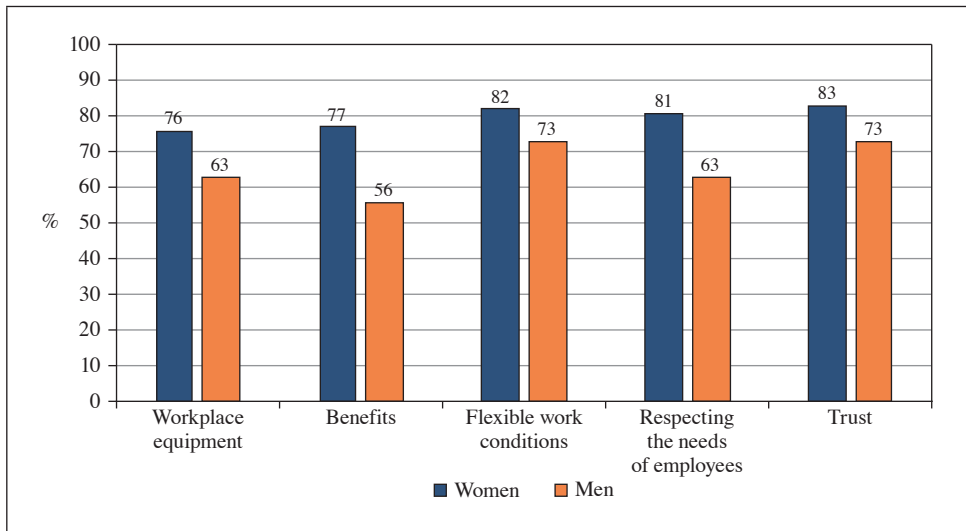
Fig. 6. Retention Factors Considered Important, by Gender
Source: the authors.

The results demonstrated that women considered a given retention factor important more often than their male counterparts. The greatest difference was found for two factors that compelled employees to stick with an employer – the prevalence of benefits (19%), and respecting the needs of employees (18%). Flexible work conditions and trust were also more commonly indicated by women as important (10%). Both these factors were deemed important by more than 80% of the women surveyed.

Time of employment diversified those surveyed the least. In fact, differences associated with seniority were statistically significant for only three factors: remuneration, atmosphere, and benefits, with remuneration and benefits far more often reported as significant by employees with seniority of less than 15 years. Meanwhile, among employees with seniority of less than 15 years, as many as 90% regard the atmosphere at work as a significant retention factor.

5. Conclusions and Discussion of the Results

The study found that, according to the employees, four factors were essential for staying with an organisation for a longer time: employment stability (87% declared this be to important), development options (85%), remuneration (85%), and work atmosphere (84%). For their part, managers indicated: work atmosphere (85%), development options (80%), and remuneration (77%). These results allow us to conclude that the managers and employees evaluated the retention factors along similar lines, though numerous managers still fail to appreciate the meaning of these factors. Only the work atmosphere and psychological support are assessed nearly identically in both groups: for the atmosphere it is a similarly high position (85% vs. 84%), and, in the case of the support, it is similarly low (37% vs. 34%).

For the other factors, fewer managers than employees recognised a given factor as essential for their decision to stay with an organisation for a longer time. The highest underestimation was apparent for: workplace equipment, indicated by 74% of employees as important but only by 51% of managers (a 23% difference), and benefits (a difference of 20%). Flexible work hours (difference 17%), autonomy (16%), respect for the needs of the employees, and employment stability (13% each) were slightly less differentiated. At this point, it should be noted that more than a quarter of the managers failed to cite the top item employees named as important – employment stability. The differences between the results showed that, for several factors surveyed, approximately one in five managers is unaware of the significance of a given factor for an employee-retention strategy. This partially confirms our first hypothesis.

The analysis of the differences in the significance assigned to the retention factors, taking into account individual and organisational features, enables us to describe predictors of that significance. The majority of the statistically significant differences are associated with business size. The study shows that these differences were associated with 9 of the 11 factors under analysis. The significance of the relations between the employees at micro companies was clear: 100% regard trust as an important retention factor, and 94% saw atmosphere as essential. At medium-sized companies the figures were 56% and 59%, respectively. Employees of micro companies had more in common with their counterparts at large companies. This is perhaps because large companies are seen to have the resources and

procedures to ensure that these factors are addressed, while relations and personal attitude at micro companies are key in good functioning and the implementation of tasks in such a small group.

The study of the relationship between work satisfaction and the evaluation of retention factors has demonstrated that persons who feel satisfied with their job definitely more often consider their autonomy important. They also see benefits as more significant. Those who were displeased most frequently reported the following factors as insignificant for staying at the organisation for a longer time: respecting the needs of employees (21% difference in the answers of managers and employees), obtaining psychological support (22% difference), benefits (17% difference), and autonomy (24% difference).

The data suggest that a large number of those who declared dissatisfaction with their job did not identify the source of their dissatisfaction as being connected with the absence of these factors and would not expect their employer to implement them. At the same time, those who were satisfied perceived the presence of such solutions for building a retention strategy differently. This could mean that the displeased recognise these factors as irrelevant, since there are other, more significant reasons for their dissatisfaction, or that their job dissatisfaction – or, a failure to achieve one of their most important needs – grows out of a lack of autonomy or a more individual approach to their work from their manager. However, an increase in one's satisfaction occurs when these factors are appreciated. This may suggest that steps taken to promote the retention of dissatisfied employees should start from identifying the source of this problem, and, eventually, solving it. Otherwise measures taken may go unappreciated or even unobserved.

Considering the interest of scientists and practitioners with different expectations of employees from various generations (Skowron-Mielnik & Bor, 2015; Pandita & Kumar, 2022), this study also looked at employee age. Statistically significant differences appear mainly for employees above 50 years of age and the youngest cohort. The fact that older employees, compared to the two younger groups of employees, significantly less often indicate the importance of autonomy (a difference of 48% and 36%) and flexible working conditions (a difference of 49% and 45%), can be explained by the fact that perhaps most of them, due to their competence, are at a stage of professional development at which they have acquired sufficient autonomy, and the lack of need to combine work with, for example, caring for young children makes them not need such flexible working hours. At the same time, older employees less often pointed to the importance of the atmosphere at work (difference of 18% and 16%). This could mean that at least some of them have developed systems of coping with stressful situations or an unpleasant work atmosphere. On the other hand, the greatest difference between the 20–30 and

31–50-year-old employees concerned autonomy, as it was more important for middle-aged employees (a difference of 12%).

The data on diversification by gender shows that the women surveyed mentioned the importance of the factors being studied more often than the men did. It is likely that some of these differences result from the importance of the organisation striving to match the professional and private lives of employees. Still, the studies show that women care for children or dependent family members more often than men do, all whilst working in their careers (Witkowska, Kompa & Matuszewska-Janica, 2019). Flexible work conditions, combined with respecting employee needs and providing benefits such as family medical care plan go a long way towards helping women and their families. Women also alluded to the role of trust at the workplace more often than did men, perhaps demonstrating that women are more likely to, as observed by Sharma and Sharma (2021), perceive the work environment through the prism of psychological-social factors. These include communication with supervisors, informal groups, and group tasks as important psychosocial determinants of trust at the workplace.

The data we obtained also confirmed our second hypothesis. Our comprehensive study of the literature shows that no single factor can be recognised as the one most important for retention. Rather, the significance of the retention factors for employees is determined by multiple criteria. This means that the importance of a particular factor depends on the employee's individual traits, as well as those of the organisation. The study allows for the conclusion, with some caution, retention factors that are seen as important can be predicted by the size of a business, one's age and satisfaction level. These should also be included in creating retention strategies.

This study is not without its limitations. Like all questionnaire studies, it is based on what individuals declared, and that may not fully accord with their actual beliefs. A similar study performed on a greater sample of respondents and, additionally, limiting the individuals surveyed to a few industries could verify the results obtained more thoroughly. In the future, the survey used for the research presented here would be worth continuing, this time with an in-depth exit interview method (offboarding). Whilst performing interviews at the end of one's employment are intended to ensure a positive experience at the end of cooperation, information could be obtained as to why they are changing their workplace and what could have motivated them to stay with the company.

6. Summary

This study has demonstrated that the employees and managers differ in how they evaluate the importance of retention factors at the organisation. This applies both to their hierarchy and the general tendency among managers to underestimate

the importance of particular factors. The employees most commonly indicated the importance of employment stability, development options, remuneration, and work atmosphere. These factors obtained a very similar number of answers, perhaps suggesting they are of nearly equal importance. On the other hand, 26% of the managers did not see the importance of employment stability, which was of paramount importance for the employees. Further, at 23%, the difference in the answers between employees and managers regarding the workplace equipment as a factor that kept people in their jobs was considerable as well.

The results of the study prove that when planning a retention strategy, organisations would do well to consider the predictors of the importance of given factors. It is worth noting here that all variables taken into consideration in this study proved significant in assessing the importance of the factors selected. This means the managers should choose those factors from the pool of retention factors that are important for each particular group of employees according to their age, gender, and length of service. The size of the enterprise and the work satisfaction level should likewise be taken into consideration. Although the results obtained do not justify generalisation to the entire population, they clearly indicate the importance of customisation in the retention strategies. Like those of Sinha and Sinha (2012), our results confirmed that what works effectively with one employee may not work for all. Indeed, efforts to retain employees must be adapted to their individual needs.

To sum up, investing in retention strategies that promote the success of the organisation is essential. The costs associated with high employee turnover, including expenses for recruitment and trainings, can be mitigated by implementing effective retention strategies. By prioritising employee satisfaction and well-being, organisations can improve their financial results, increase their competitiveness, and create a more positive work environment.

Authors' Contribution

The authors' individual contribution is as follows: Each contributed 50%.

Conflict of Interest

The authors declare no conflict of interest.

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On Bootstrap Algorithms in Survey Sampling

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ABSTRACT

Objective: The aim of this paper is to present bootstrap algorithms for measuring the accuracy of estimation and prediction in design-based and model-based approaches in survey sampling and small area estimation. Three proposals of prediction-mean squared error estimators are also examined.

Research Design & Methods: Various bootstrap procedures are shown and used to estimate the design- and prediction-mean squared errors based on real data. Computations are supported by two R packages.

Findings: Three prediction-mean squared error estimators are proposed.

Implications/Recommendations: The bootstrap algorithms used in the design-based approach give similar results for the considered data for the variance estimates of the considered estimator, implying that the speed of the algorithms may be important for practitioners in cases of similar properties. The proposed estimators of the prediction mean squared error produce higher estimates than other estimators in the model-based approach, indicating a positive bias that can be interpreted as a pessimistic accuracy estimate.

Contribution: All the presented bootstrap algorithms are easily applicable using two R packages available at R CRAN and GitHub. Three double bootstrap prediction-MSE estimators are proposed and analysed in the real-data application.

1. Introduction

In survey sampling, two main approaches are considered – the classic design--based approach usually used to estimate the population parameters and the model--based approach typically used to predict subpopulation characteristics. In both approaches, accuracy estimation is among the crucial problems. Many estimators of accuracy measures are based on the various bootstrap algorithms discussed in this paper.

In the design-based approach, the inference is based on a random sample denoted by s. The variable of interest, typically denoted by y, is treated as fixed (non-random). Let $\mathbf{P}$, called the sampling space, be the set of all sample sets s. The sampling design is defined as the probability distribution $P(s)$ defined on the sampling space $\mathbf{P}$, such that $P(s) \geq 0$ and $\sum_{s \in \mathbf{P}} P(s) = 1$ for all $s \in \mathbf{P}$. As pointed out by Cassel, Särndal and Wretman (1977, p. 19), the data obtained based on a sample s and the associated observations of y's can be written as $d = ((k, y_k) : k \in s)$. In the design-based approach, d is treated as the realisation of $D = ((k, y_k) : k \in S)$, where S is a random variable whose realisations are possible samples drawn from the population. The statistic, denoted by $Z = u(D)$, is a function defined on the sample space of the random variable D, such that it depends on the variable of interest only through y_k for which $k \in s$ (Cassel, Särndal & Wretman, 1977, p. 20). The estimator of the parameter θ is a statistic $\hat{\theta}$ with values which belong to the parameter space. Hence, the sampling design is usually assumed to be the only source of the estimator's randomness. Before proceeding, it is necessary to define the inclusion probability of order r, denoted by $\pi_{k_1 \ldots k_r}$. It was defined by Cassel, Särndal and Wretman (1977, p. 11) as the probability that population elements $k_1, k_2, \ldots, k_r$ are included in the sample: $\pi_{k_1 \ldots k_r} = \sum_{s \in A(k_1 \ldots k_r)} P(s)$ where $A(k_1 \ldots k_r) = \{s : k_i \in s, \text{ for } i = 1, \ldots, r\}$. Hence, the first order inclusion probability of an element k is the sum of probabilities of selecting those samples s that contain the element. Therefore, its inverse can be interpreted as the number of population elements represented by the sample element k. The measure of the design-based accuracy is the design-MSE (mean squared error) defined as (Cassel, Särndal & Wretman, 1977, p. 26):

$$MSE_p(\hat{\theta}) = E_p(\hat{\theta} - \theta)^2 = Var_p(\hat{\theta}) + B_p^2(\hat{\theta}), \tag{1}$$

where θ is a parameter, $\hat{\theta}$ is an estimator, $E_p(\,.\,)$ is the expectation with respect to the sampling design, $Var_p(\hat{\theta}) = E_p\left(\hat{\theta} - E_p(\hat{\theta})\right)^2$ is the measure of the design-precision and is called the design-variance, and $B_p(\hat{\theta}) = E_p(\hat{\theta}) - \theta$ is the design-bias.

In the model-based approach, the inference can be made based on both random and purposive samples. It is assumed that the observed vector of the variable of interest is the realisation of a certain vector of random variables $\mathbf{Y} = [Y_1, Y_2, \ldots, Y_N]^T$ with some joint distribution denoted by ζ. The superpopulation model is the set of conditions that define the class of distributions to which distribution ζ is assumed to belong. In this approach (Cassel, Särndal & Wretman, 1977, p. 91), the observed data $d = ((k, y_k) : k \in s)$ are treated as the realisation of $D' = ((k, Y_k) : k \in s)$. What is more, the statistic denoted by $Z = u(D')$ is a function, that for any given sample s depends on $Y_1, Y_2, \ldots, Y_N$ only through those Y_k such that $k \in s$ (Cassel, Särndal & Wretman, 1977, p. 91). If a statistic $\hat{\theta}$ is used to predict θ, which is a function of $Y_1, Y_2, \ldots, Y_N$, it is called a predictor of θ (Cassel, Särndal & Wretman, 1977, p. 91). Because values of the variable of interest are assumed to be realisations of the random variables, the predicted characteristic $\theta = \theta(\mathbf{Y})$ is random as well. Finally, it is commonly assumed that the distribution of the variable of interest is the only source of a predictor's randomness.

Some basic notations are introduced to present the linear mixed model, which is widely used in survey sampling. The population Ω of size N is divided into two sets: the sample s of size n and the set of non-sampled elements $\Omega_r = \Omega \backslash s$ of size $N_r = N - n$. The values of the variable of interest $y_1, y_2, \ldots, y_N$ are assumed to be realisations of random variables $Y_1, Y_2, \ldots, Y_N$. The population vector of size N of the random variables is denoted by $\mathbf{Y}$. There are also two known population matrices of auxiliary variables of sizes $N \times p$ and $N \times q$, denoted by $\mathbf{X}$ and $\mathbf{Z}$ and associated with fixed and random effects, respectively.

Rao and Molina (2015, p. 98) assume that the population data obey the following linear mixed model (LMM) assumptions:

$$\mathbf{Y} = \mathbf{X}\boldsymbol{\beta} + \mathbf{Z}\mathbf{v} + \mathbf{e}, \tag{2}$$

where $\mathbf{v} \sim N(\mathbf{0}, \mathbf{G}(\boldsymbol{\delta}))$ and $\mathbf{e} \sim N(\mathbf{0}, \mathbf{R}(\boldsymbol{\delta}))$ are called vectors of random effects and random components, and are assumed to be independent. The vector of unknown parameters of the LMM is denoted by $\Psi = [\boldsymbol{\beta}^T \ \boldsymbol{\delta}^T]^T$, where $\boldsymbol{\beta}$ and $\boldsymbol{\delta}$ are vectors of fixed effects and variance components, respectively.

Without loss of generality, we assume that only first n realisations of Y_i are observed in the sample, and thus, we can decompose $\mathbf{Y}$ as follows: $\mathbf{Y} = [\mathbf{Y}_s^T \ \mathbf{Y}_r^T]^T$, where $\mathbf{Y}_s$ and $\mathbf{Y}_r$ are of sizes $n \times 1$ and $N_r \times 1$, respectively. In all notations, the subscript "s" is used for the sample and "r" for non-sampled elements. Similarly to the decomposition of the $\mathbf{Y}$ vector, matrices of auxiliary information in (2) can be decomposed

as follows: $\mathbf{X} = \begin{bmatrix} \mathbf{X}_s^T & \mathbf{X}_r^T \end{bmatrix}^T$ and $\mathbf{Z} = \begin{bmatrix} \mathbf{Z}_s^T & \mathbf{Z}_r^T \end{bmatrix}^T$. Matrices $\mathbf{R}(\boldsymbol{\delta})$ and $\mathbf{G}(\boldsymbol{\delta})$ are variance-covariance matrices of random vectors $\mathbf{e}$ and $\mathbf{v}$, respectively. The variance-covariance matrix of the dependent variable is denoted by $Var(\mathbf{Y}) = \mathbf{V}(\boldsymbol{\delta}) = \mathbf{Z}\mathbf{G}(\boldsymbol{\delta})\mathbf{Z}^T + \mathbf{R}(\boldsymbol{\delta})$.

$\mathbf{V}$ and $\mathbf{R}$ can be decomposed as follows: $\mathbf{V} = \begin{bmatrix} \mathbf{V}_{ss} & \mathbf{V}_{sr} \\ \mathbf{V}_{rs} & \mathbf{V}_{rr} \end{bmatrix}$, $\mathbf{R} = \begin{bmatrix} \mathbf{R}_{ss} & \mathbf{R}_{sr} \\ \mathbf{R}_{rs} & \mathbf{R}_{rr} \end{bmatrix}$, where $\mathbf{V}_{ss} = Var(\mathbf{Y}_s)$, $\mathbf{V}_{rr} = Var(\mathbf{Y}_r)$, $\mathbf{V}_{sr} = Cov(\mathbf{Y}_s, \mathbf{Y}_r)$, $\mathbf{V}_{rs} = Cov(\mathbf{Y}_r, \mathbf{Y}_s)$ and similarly $\mathbf{R}_{ss} = Var(\mathbf{e}_s)$, $\mathbf{R}_{rr} = Var(\mathbf{e}_r)$, $\mathbf{R}_{sr} = Cov(\mathbf{e}_s, \mathbf{e}_r)$, $\mathbf{R}_{rs} = Cov(\mathbf{e}_r, \mathbf{e}_s)$.

The prediction-MSE (mean squared error) is a measure of prediction accuracy, defined as follows (Rao & Molina, 2015, p. 98):

$$MSE_\zeta(\hat{\theta}) = E_\zeta(\hat{\theta} - \theta)^2 = Var_\zeta(\hat{\theta} - \theta) + B_\zeta^2(\hat{\theta}), \qquad (3)$$

where θ is a predicted random characteristic, $\hat{\theta}$ is a predictor, $E_\zeta(\,.\,)$ is the expectation with respect to the ζ distribution, $Var_\zeta(\hat{\theta}) = E_\zeta(\hat{\theta} - \theta - E_\zeta(\hat{\theta} - \theta))^2$ is the measure of the prediction-precision known as the prediction-variance, $B_\zeta(\hat{\theta}) = E_\zeta(\hat{\theta} - \theta)$ is the prediction-bias.

In this paper we present bootstrap algorithms for estimating the accuracy and precision of any estimator and predictor in both approaches. In sections 2 and 3, two bootstrap approaches in the design-based inference are studied. Different bootstrap approaches used in the model-based inference are introduced in sections 4, 5, and 6, including our new proposals of three prediction-MSE estimators based on the double bootstrap. In sections 7 and 8, real data applications are presented using two R packages: *pipsboot* (Kucharski & Żądło, 2021) and *qape* (Wolny-Dominiak & Żądło, 2022b).

2. The ad-hoc Approach in Design-based Inference

The classic Efron's bootstrap (Efron, 1979) procedure, where simple random samples are drawn with replacement from the original sample, is correct under the independence of random variables. In the case of complex sampling designs, appropriate modifications are required.

Let S_k^* be a number of replications of element k in the bootstrap sample. In the case of methods based on the *ad-hoc* approach, whether the following equalities hold for the proposed method (Antal & Tillé, 2014, p. 1349) is usually checked:

$$E^*(S_k^*) = 1, \ k \in S, \qquad (4)$$

$$Var^*(S_k^*) = 1 - \pi_k, \ k \in S, \qquad (5)$$

$$Cov^*(S_k^*, S_l^*) = (\pi_{kl} - \pi_k \pi_l)\pi_{kl}^{-1}, \ k \neq l \in S. \qquad (6)$$

If these equality conditions are met for a bootstrap method, the bootstrap variance estimator of the Horvitz-Thompson estimator is equal to the unbiased classic vari-

ance estimator proposed by Horvitz and Thompson (1952). A modification of (5) and (6) can also be considered (Antal & Tillé, 2014, p. 1349) to ensure that the bootstrap variance estimator of the Horvitz-Thompson estimator is equal to the unbiased SYG variance estimator proposed by Sen (1953) and Yates and Grundy (1953). Usually, only the first two conditions (4) and (5) are considered because it is difficult to meet (6) exactly for fixed sampling designs with unequal inclusion probabilities, as stated by Antal and Tillé (2014, p. 1349). It should also be noted that meeting these conditions ensures unbiasedness of the bootstrap variance estimator of the Horvitz-Thompson estimator. However, if they are not met it does not imply that the bootstrap variance estimator of the Horvitz-Thompson estimator is less accurate than any other (including classic) variance estimator. Furthermore, these conditions are defined for the Horvitz-Thompson estimator, whereas in practice, other estimators can also be used (for example, those that use auxiliary information).

According to Ranalli and Mecatti (2012), the majority of bootstrap methods for complex sampling designs can be classified into one of two approaches. The first, the ad-hoc approach, is usually based on iid resampling and rescaling sample data. Methods using this approach include the rescaling bootstrap (Rao & Wu, 1988), the mirror-match bootstrap (Sitter, 1992), and the generalised weighted bootstrap (Beaumont & Patak, 2012). Proposals presented by Antal and Tillé (2011, 2014) are also considered within this approach.

One of these algorithms is presented below in detail as an example of the ad-hoc approach. The authors mix several sampling designs for resampling to meet two conditions: (4) and (5).

Algorithm 1. The bootstrap algorithm proposed by Antal and Tillé (2014, pp. 1355–1356) for the proportional-to-size sampling is presented below. Let function $H(.;.)$ be a function used to compute first order inclusion probabilities for the original sampling design, i.e., $\pi_k = H(x_1, x_2, \ldots, x_N; n)$.

1. Selecting the initial bootstrap sample. Use the Poisson sampling design with original inclusion probabilities π_k to choose units from S, where $X_k (k \in S)$ will denote the initial sample membership indicator. The units selected once form the initial bootstrap sample: $S_k^* = X_k$. Let $m = \sum_{k \in S} X_k$, and hence, $E_p(m) = \sum_{k \in S} \pi_k$.

2. Completing the bootstrap sample.

a) If $n - m \geq 2$, the double half sampling design is used among units such that $X_k = 0$ to draw $n - m$ elements. If $n - m$ is even, the procedure of the double half sampling design is defined as a sampling of $0.5(n - m)$ elements with simple random sampling without replacement, and then, each selected unit is taken twice. If $n - m$ is odd, the double half sampling design is slightly modified, as described by Antal and Tillé (2014, pp. 1351–1352).

b) If $n - m = 1$, the S_k^* is redefined as follows:

– with 0.5 probability: $S_k^* = 1$ for $k \in S$, i.e., the bootstrap sample is defined as the original sample,

– with 0.5 probability:

compute $\pi_{k \mid n-1} = E\left(X_k \mid m = n-1\right) = 1 - (1 - \pi_k)\pi_k^{-1}(\sum_{l \in S}(1 - \pi_l)\pi_l^{-1})^{-1}$. Then, using an unequal inclusion probabilities sampling design with a fixed sample size, draw $n - 2$ elements from S with probabilities $\psi_k = 1 - H_k\left(1 - \pi_{k \mid n-1}, k \in S; 2\right)$ and take them to the bootstrap sample once. Finally, draw a double half sample from the two remaining units.

Bootstrap estimators of the design-variance and the design-bias are defined as follows (e.g., Rao & Wu, 1988):

$$\widehat{Var}_p^{boot}(\hat{\theta}) = \frac{1}{B-1}\sum_{b=1}^{B}\left(\hat{\theta}_b^* - \frac{1}{B}\sum_{b=1}^{B}\hat{\theta}_b^*\right)^2, \tag{7}$$

$$\widehat{B}_p^{boot}(\hat{\theta}) = \frac{1}{B}\sum_{b=1}^{B}\hat{\theta}_b^* - \hat{\theta}, \tag{8}$$

where $\hat{\theta}$ is the value of the considered estimator computed based on the original sample and $\hat{\theta}_b^*$ is the value of the estimator computed for the bootstrap sample obtained in the bth iteration.

3. Plug-in Approach in Design-based Inference

The second approach is the plug-in approach. It is based on the concept of a pseudopopulation, though the pseudopopulation is not physically generated in some methods.

Algorithm 2. The general algorithm of typical bootstrap procedures for complex sampling designs based on the plug-in approach is as follows (compare Barbiero & Mecatti, 2010):

1. Define (possibly non-integer) weights w_k that determine how many population elements are represented by a given sample element.

2. If weights $w_k\left(k \in S\right)$ are not integers, replace them by integers denoted by $\tilde{w}_k$.

3. Build a pseudopopulation $\Omega^* = \left\{1, 2, \ldots, k^*, \ldots, N^{pseudo}\right\}$ by replicating the original sample elements $\tilde{w}_k$-times $\left(k \in S\right)$ each.

4. Draw a bootstrap sample S^* of size n (the original sample size) from Ω^* mimicking the original sampling design.

5. Compute the value of an estimator $\hat{\theta}$ on bootstrap sample s^*. Denote it by $\hat{\theta}^*$.

6. Steps 4 and 5 are iterated B times, which gives $\hat{\theta}_b^*$ for $b = 1, 2, \ldots, B$.

Many bootstrap algorithms can be described using Algorithm 2 with various definitions of w_k and $\tilde{w}_k$. Holmberg (1988) defines integer weights as follows: $w_k = \tilde{w}_k = \lfloor \pi_k^{-1} \rfloor + \epsilon_k$, where $\lfloor \pi_k^{-1} \rfloor$ is rounded down value of π_k^{-1} and ϵ_k is generated once from Bernoulli distribution with probability $\pi_k^{-1} - \lfloor \pi_k^{-1} \rfloor$. Barbiero and Mecatti (2010)

propose the 0.5 bootstrap with $w_k = \pi_k^{-1}$ and $\tilde{w}_k$ defined as w_k rounded to the nearest integer. Barbiero, Manzi and Mecatti (2015) present a similar proposal, but w_k are calibration weights (see e.g. Deville & Särndal, 1992) and $\tilde{w}_k$ are defined as w_k rounded to the nearest integer. Barbiero and Mecatti's (2010) two proposals for an x-balanced bootstrap are slightly different. The numbers of replications $w_k = \tilde{w}_k$ are rounded-down inverses of first order inclusion probabilities, to which additional pseudoelements are added to achieve the minimum absolute difference between total values of an auxiliary variable in the real population and the pseudopopulation.

Żądło (2021) proposed a fast procedure – a generalisation of the bootstrap algorithm presented by Quatember (2014) for probability proportional-to-size sampling, inspired by the plug-in approach. Here, though, the pseudopopulation is not physically constructed. The fact that the pseudo-population does not have to be created is crucial for the calculation time in this iterative algorithm. The proposed procedure is a draw-by-draw algorithm. In the bth bootstrap sample $(b = 1, 2, \ldots, B)$ element k is drawn from the original sample in the jth draw $(j = 1, 2, \ldots, n)$ with probability:

$$\left(w_k - h_{k, j-1}\right) \times x_k \left(t_x - \sum_{i \in s_{b, j-1}} x_i\right)^{-1}, \tag{9}$$

where w_k's are some calibration weights such that $\sum_{i \in s} w_i x_i = \sum_{i \in \Omega} x_i$ (see Deville & Särndal, 1992), $h_{k, j-1}$ is the number of replications of element k selected in the bootstrap procedure in the first $j-1$ draws, and $s_{b, j-1}$ is the subset of the bth bootstrap sample after draw $j-1$.

4. Parametric Bootstrap in Model-based Inference

In the two preceding sections we have presented bootstrap algorithms for the design-based inference. In this and subsequent sections, the model-based inference is analysed. Let us consider the problem of predicting a function of the population vector $\mathbf{Y}$ denoted by $\theta = \theta(\mathbf{Y})$ using a predictor $\hat{\theta} = \hat{\theta}(\mathbf{Y}_s)$, as well as the estimating its prediction accuracy.

Algorithm 3. The parametric bootstrap algorithm for the linear mixed model, presented by Butar and Lahiri (2003, p. 67) and Rao and Molina (2015, pp. 183–186), is as follows:

1. Based on n sample observations, estimate a vector of model parameters Ψ and obtain its estimate $\hat{\Psi}$.

2. Generate B realisations $y_i^{*(b)}$ (where $b = 1, 2, \ldots, B$) of Y_i, under model (2), where parameters Ψ are replaced by $\hat{\Psi}$, to obtain a bootstrap realisation of the population vector $\mathbf{Y}$ denoted by $\mathbf{y}^{*(b)} = \left[y_1^{*(b)} \ldots y_i^{*(b)} \ldots y_N^{*(b)}\right]^T$, where $i = 1, 2, \ldots, N$ and $b = 1, 2, \ldots, B$.

3. Decompose vectors $\mathbf{y}^{*(b)}$, where $b = 1, 2, \ldots, B$, as follows $\left[\mathbf{y}_s^{*(b)T} \quad \mathbf{y}_r^{*(b)T}\right]^T$.

4. For $b = 1, 2, \ldots, B$ do

a) Compute the bootstrap realisation of the characteristic of interest θ denoted by $\theta^{*(b)} = \theta^{*(b)}\big(\mathbf{y}^{*(b)}, \hat{\boldsymbol{\Psi}}\big)$.

b) Estimate $\boldsymbol{\Psi}$ based on generated data $\mathbf{y}_s^{*(b)}$ to obtain $\hat{\boldsymbol{\Psi}}^{*(b)}$.

c) Compute the bootstrap realisation of $\hat{\theta}$ denoted by $\hat{\theta}^{*(b)}\big(\mathbf{y}_s^{*(b)}, \hat{\boldsymbol{\Psi}}^{*(b)}\big)$ based on (2), where $\boldsymbol{\Psi}$ is replaced with $\hat{\boldsymbol{\Psi}}^{*(b)}$.

d) Compute bootstrap realisations of prediction error U^* denoted by u^* and for the bth iteration given by:

$$u^{*(b)} = \hat{\theta}^{*(b)}\big(\mathbf{y}_s^{*(b)}, \hat{\boldsymbol{\Psi}}^{*(b)}\big) - \theta^{*(b)}\big(\mathbf{y}^{*(b)}, \hat{\boldsymbol{\Psi}}\big) = \hat{\theta}^{*(b)} - \theta^{*(b)}. \tag{10}$$

EndFor.

5. Estimate the prediction mean squared error:

$$\widehat{MSE}^{parametric}\big(\hat{\theta}\big) = B^{-1} \sum_{b=1}^{B} u^{*(b)^2}. \tag{11}$$

If the model assumptions are met, the bootstrap estimator (11) has good properties compared with other MSE estimators (e.g., Krzciuk, 2018).

5. Residual Bootstrap in Model-based Inference

Before the introduction of the algorithm, we introduce the correction procedure of predicted random effects and random components. The correction procedure aims to avoid the problem of the underdispersed bootstrap distributions of parameter estimates and downwardly biased variance parameter estimates (Carpenter, Goldstein & Rasbash, 2003, p. 435).

Without losing the generality, we can rewrite model (2) as follows:

$$\mathbf{Y} = \mathbf{X}\boldsymbol{\beta} + \mathbf{Z}_1\mathbf{v}_1 + \ldots + \mathbf{Z}_l\mathbf{v}_l + \ldots + \mathbf{Z}_L\mathbf{v}_L + \mathbf{e}, \tag{12}$$

where $\mathbf{v}_1, \ldots, \mathbf{v}_l, \ldots, \mathbf{v}_L$ are independent vectors for different divisions of $\mathbf{Y}$ vector,

$$\mathbf{v}_l = \big[\mathbf{v}_{l1}^T \ldots \mathbf{v}_{lk}^T \ldots \mathbf{v}_{lK_l}^T\big]^T \tag{13}$$

is of size $K_l J_l \times 1$, where $\mathbf{v}_{lk}$ is $J_l \times 1$ for all $k = 1, \ldots, K_l$ and K_l is the number of random effects at lth level of grouping, $\mathbf{Z}_l$ is of size $N \times K_l J_l$.

Firstly, the correction procedure of random components is presented based on Chambers and Chandra (2013, p. 455). It is assumed that $Var(\mathbf{e}) = \mathbf{R} = \sigma_e^2 diag_{1 \leq i \leq N}(a_i)$ with known weights a_i. The corrected estimates of random components are defined as follows:

$$\hat{e}_{(cor)i} = \hat{\sigma}_e \sqrt{a_i}\, \hat{e}_i \left(n^{-1} \sum_{k=1}^{n} \hat{e}_i\right)^{-0.5}, \tag{14}$$

where $i = 1, 2, \ldots, n$, $\hat{\sigma}_e^2$ is an estimate (e.g., REML estimate) of σ_e^2 and $\hat{e}_i$ are estimated random components computed under model (2).

Secondly, the random effects' correction procedure based on Thai *et al.* (2013, p. 132) and Carpenter, Goldstein and Rasbash (2003, pp. 435–436) is introduced. We consider vector (13) and its covariance matrix of size $K_l \times K_l$ defined as $\boldsymbol{\Sigma}_l = Var\left([v_{l1j} \ldots v_{lkj} \ldots v_{lK_lj}]^T\right)$, where v_{lkj} is the jth element of $\mathbf{v}_{lk}$. The estimated matrix $\boldsymbol{\Sigma}_l$, obtained by replacing unknown variance components with their (e.g. Restricted Maximum Likelihood) estimates is denoted by $\hat{\boldsymbol{\Sigma}}_l$, while the

empirical covariance matrix is given by $\boldsymbol{\Sigma}_{(emp)l} = J_l^{-1} \begin{bmatrix} \hat{\mathbf{v}}_{l1}^T \\ \ldots \\ \hat{\mathbf{v}}_{lk}^T \\ \ldots \\ \hat{\mathbf{v}}_{lK_l}^T \end{bmatrix} \begin{bmatrix} \hat{\mathbf{v}}_{l1}^T \\ \ldots \\ \hat{\mathbf{v}}_{lk}^T \\ \ldots \\ \hat{\mathbf{v}}_{lK_l}^T \end{bmatrix}^T$, where $\hat{\mathbf{v}}_{lk}$ are esti-

mated best linear unbiased predictors of $\mathbf{v}_{lk}$. Using Cholesky decomposition, these covariance matrices can be written as $\hat{\boldsymbol{\Sigma}}_l = \mathbf{L}_{(est)l}\mathbf{L}_{(est)l}^T$ and $\boldsymbol{\Sigma}_{(emp)l} = \mathbf{L}_{(emp)l}\mathbf{L}_{(emp)l}^T$. Let $\mathbf{A}_l = \left(\mathbf{L}_{(est)l}\mathbf{L}_{(emp)l}^{-1}\right)^T$; the corrected version of the estimated best linear unbiased predictor $\hat{\mathbf{v}}_l$ is then defined as:

$$\hat{\mathbf{v}}_{(cor)l} = \hat{\mathbf{v}}_l \mathbf{A}_l. \tag{15}$$

To introduce the algorithm, $srswr(\mathbf{A}, m)$ can be defined as the outcome of taking a random sample with replacement of size m of rows of matrix $\mathbf{A}$. In the special case, when $\mathbf{A}$ is a vector, $srswr(\mathbf{A}, m)$ is a simple random sample with size m of elements of the vector replaced.

Algorithm 4. The residual bootstrap algorithm (with the correction procedure to avoid the problem of the underdispersed bootstrap distributions) presented by Carpenter, Goldstein and Rasbash (2003, pp. 435–436), Chambers and Chandra (2013, p. 455) and Thai *et al.* (2013, p. 132) for the LMM is given by Algorithm 3 of the parametric bootstrap, where step 2 is replaced by:

2. Generate B population vectors of the variable of interest, denoted by $\mathbf{y}^{*(b)}$ as:

$$\mathbf{y}^{*(b)} = \mathbf{X}\hat{\boldsymbol{\beta}} + \mathbf{Z}_1\mathbf{v}_1^{*(b)} + \ldots + \mathbf{Z}_l\mathbf{v}_l^{*(b)} + \ldots + \mathbf{Z}_L\mathbf{v}_L^{*(b)} + \mathbf{e}^{*(b)}, \tag{16}$$

where $\hat{\boldsymbol{\beta}}$ is an estimator (e.g. REML estimator) of $\boldsymbol{\beta}$, $\mathbf{e}^{*(b)}$ is a vector of size $N \times 1$ defined as $srswr(col_{1 \le i \le n}\hat{e}_{(cor)i}, N)$ with $\hat{e}_{(cor)i}$ given by (14), and $\mathbf{v}_l^{*(b)}$ (for 1, 2, ..., L) is a vector of size $K_lJ_l \times 1$ built from columns of the matrix: $srswr([\hat{\mathbf{v}}_{(cor)l1} \ldots \hat{\mathbf{v}}_{(cor)lk} \ldots \hat{\mathbf{v}}_{(cor)lK_l}], J_l)$ of size $J_l \times K_l$ with $\hat{\mathbf{v}}_{(cor)l}$ given by (15).

Then, the prediction-MSE estimator has the same form it has in the parametric bootstrap – given by (11).

6. Double Bootstrap in Model-based Inference

The double bootstrap algorithm can be used to obtain bias-corrected MSE estimators. In this procedure, the parametric bootstrap procedure is used in both levels

of the double bootstrap. The first-level bootstrap prediction errors given by (10) are obtained as the result of the first level. The second level of the bootstrap is then performed within the first level bootstrap loop, as described below in Algorithm 5.

Algorithm 5. Algorithm 3 of the parametric bootstrap provides the first level of the double-bootstrap procedure. According to Hall and Maiti (2006) and Erciulescu and Fuller (2014), in the 4th step of Algorithm 3 we add the following point e) to obtain the double-bootstrap algorithm. For the bth iteration of the first level, we add the following second-level bootstrap loop:

e) For $c = 1, 2, …, C$ do

– Under model (2), where parameters Ψ are replaced by first level estimates $\hat{\Psi}^{*(b)}$, generate second-level realisations of Y_i denoted by $y_i^{**(b,c)}$, where $i = 1, 2, …, N$ to obtain $\mathbf{y}^{**(b,c)} = \left[y_1^{**(b,c)} … y_i^{**(b,c)} … y_N^{**(b,c)} \right]^T$, which is decomposed as follows: $\mathbf{y}^{**(b,c)} = \left[\mathbf{y}_s^{**(b,c)T} \ \mathbf{y}_r^{**(b,c)T} \right]^T$.

– Compute the second-level bootstrap realisation of θ denoted by $\theta^{**(b,c)} = \theta^{**(b,c)}\left(\mathbf{y}^{**(b,c)}, \hat{\Psi}^{*(b)} \right)$.

– Use $\mathbf{y}_s^{**(b,c)}$ to obtain the vector of estimates $\hat{\Psi}^{**(b,c)}$, and compute second--level bootstrap realisation of $\hat{\theta}$, denoted by $\hat{\theta}^{**(b,c)}\left(\mathbf{y}_s^{**(b,c)}, \hat{\Psi}^{**(b,c)} \right)$.

– Compute the second-level bootstrap realisation of the prediction error given by:

$$u^{**(b,c)} =$$
$$= \hat{\theta}^{**(b,c)}\left(\mathbf{y}_s^{**(b,c)}, \hat{\Psi}^{**(b,c)} \right) - \theta^{**(b,c)}\left(\mathbf{y}^{**(b,c)}, \hat{\Psi}^{*(b)} \right) = \tag{17}$$
$$= \hat{\theta}^{**(b,c)} - \theta^{**(b,c)}.$$

EndFor.

Furthermore, in step 5 of Algorithm 3, we introduce additional MSE estimators. The first one is the classic bias-corrected double bootstrap MSE estimator (Erciulescu & Fuller, 2014, p. 12):

$$\widehat{MSE}^{db-B2}\left(\hat{\theta} \right) = 2\widehat{MSE}^{pboot} - \widehat{MSE}^{db-2lev} = B^{-1} \sum_{b=1}^{B} \tilde{u}_1^{**(b)}, \tag{18}$$

where $\widehat{MSE}^{pboot}$ is given by (11), $\widehat{MSE}^{db-2lev} = B^{-1} C^{-1} \sum_{b=1}^{B} \sum_{c=1}^{C} u^{**(b,c)^2}$,

$$\tilde{u}_1^{**(b)} = 2u^{*(b)^2} - C^{-1} \sum_{c=1}^{C} u^{**(b,c)^2} \tag{19}$$

and $u^{*(b)}$ and $u^{**(b,c)}$ are given by (10) and (17), respectively. The special case of (18) for $C = 1$ is as follows:

$$\widehat{MSE}^{db-1}\left(\hat{\theta} \right) = B^{-1} \sum_{b=1}^{B} \tilde{u}_2^{**(b)}, \tag{20}$$

where

$$\tilde{u}_2^{**(b)} = 2u^{*(b)^2} - u^{**(b,c)^2}. \tag{21}$$

The following MSE estimator, called the telescoping bootstrap MSE estimator, is a modification of (20) (Erciulescu & Fuller, 2014, p. 12):

$$\widehat{MSE}^{db-telesc}(\hat{\theta}) = B^{-1} \sum_{b=1}^{B} \tilde{u}_3^{**(b)}, \qquad (22)$$

where

$$\tilde{u}_3^{**(b)} = u^{*(b)^2} + u^{*(b+1)^2} - u^{**(b,c)^2}. \qquad (23)$$

It should be noted that one additional iteration of the first-level bootstrap should be performed using (22) in comparison to (20).

Because simulation studies showed that the properties of the above double bootstrap MSE estimators can suffer due to high bias corrections, leading even to the negative values of the MSE estimators, modifications were proposed. Hall and Maiti (2006, p. 228) provided the first:

$$\widehat{MSE}^{db-B2-HM}(\hat{\theta}) =$$

$$= \begin{cases} 2\widehat{MSE}^{pboot} - \widehat{MSE}^{db-2lev} & \text{if } \widehat{MSE}^{pboot} \geq \widehat{MSE}^{db-2lev} \\ \widehat{MSE}^{pboot} \exp\left[\dfrac{\widehat{MSE}^{pboot} - \widehat{MSE}^{db-2lev}}{\widehat{MSE}^{db-2lev}} \right] & \text{if } \widehat{MSE}^{pboot} < \widehat{MSE}^{db-2lev} \end{cases} \qquad (24)$$

Erciulescu and Fuller (2014, p. 3311) provided the second:

$$\widehat{MSE}^{db-1-EF}(\hat{\theta}) =$$

$$= \begin{cases} q \times \widehat{MSE}^{pboot} & \text{if } \left(\widehat{MSE}^{pboot}\right)^{-1} B^{-1} \sum_{b=1}^{B} u^{**(b,c)^2} < q \\ \widehat{MSE}^{db-1} & \text{otherwise} \end{cases} \qquad (25)$$

where the authors' proposal is to set $q = 0.77$ and $C = 1$. The third modification, itself a modification of (22), can be written as follows (Erciulescu & Fuller, 2014, p. 3312):

$$\widehat{MSE}^{db-telesc-EF}(\hat{\theta}) =$$

$$= \begin{cases} \widehat{MSE}^{pboot} & \text{if } \left(\widehat{MSE}^{pboot}\right)^{-1} B^{-1} \sum_{b=1}^{B} u^{**(b,c)^2} < q \\ \widehat{MSE}^{db-telesc} & \text{otherwise} \end{cases} \qquad (26)$$

where the authors' proposal is to set $q = 0.77$ and $C = 1$.

Estimators (24), (25) and (26) are modifications of (18), (20) and (22), proposed to avoid negative MSE estimates. We propose to solve this problem differently: not by correcting the final results, but by correcting potentially negative elements $\tilde{u}_1^{**(b)}$, $\tilde{u}_2^{**(b)}$ and $\tilde{u}_3^{**(b)}$, given by (19), (21) and (23), functioning as squared predictions errors. Here we define the following modifications of (19), (21) and (23) to avoid possible negative values:

$$\tilde{u}_{h\,mod}^{**(b)} = \begin{cases} \tilde{u}_h^{**(b)} & \text{if} \quad \tilde{u}_h^{**(b)} \geq 0 \\ u^{*(b)2} & \text{if} \quad \tilde{u}_h^{**(b)} < 0 \end{cases}, \quad h = 1, 2, 3 \tag{27}$$

This leads to the following proposals of modifications of (18), (20) and (22):

$$\widehat{MSE}^{db-B2-mod}(\hat{\theta}) = B^{-1} \sum_{b=1}^{B} \tilde{u}_{1\,mod}^{**(b)}, \tag{28}$$

$$\widehat{MSE}^{db-1-mod}(\hat{\theta}) = B^{-1} \sum_{b=1}^{B} \tilde{u}_{2\,mod}^{**(b)}, \tag{29}$$

$$\widehat{MSE}^{db-telesc-mod}(\hat{\theta}) = B^{-1} \sum_{b=1}^{B} \tilde{u}_{3\,mod}^{**(b)}, \tag{30}$$

where $\tilde{u}_{h\,mod}^{**(b)}$, $h = 1, 2, 3$ are given by (27) for $h = 1, 2, 3$.

7. Applications – Part 1

We consider a real dataset from Särndal, Swensson and Wretman (1992) on 281 Swedish municipalities, which is available in the *sampling* R package (Tillé & Matei, 2021). The variable of interest is the revenue from municipal taxation in millions of kronor in 1985 (denoted by RMT85). The auxiliary variable is the population in 1975 in thousands of people (denoted by P75). It is used in this section to compute first-order inclusion probabilities for probability-proportional-to-size sampling using the Brewer sampling scheme (e.g., Tillé, 2006, p. 114). The estimation of the population total is considered, but the estimation of the design-accuracy of other population parameters, as presented by e.g., Antal and Tillé (2014) and Stachurski (2018), can also be analysed. Using the sampling scheme mentioned above, one sample of a size equal to of the population size $N = 281$ is drawn. The value of the Horvitz--Thompson (HT) estimator of the population total of municipal taxation revenues is computed based on the sample (53,861.61 Swedish kronor).

We estimate the design-standard error using various bootstrap algorithms available in *pipsboot* R package (Kucharski & Żądło, 2021). The number of iterations set for a bootstrap algorithm should be high enough to ensure stable results – some proposals have been put forward by Chwila and Żądło (2020). We use 1,000 iterations. The following algorithms are considered:

– BM0.5 – Barbiero and Mecatti (2010) 0.5 bootstrap,
– AT2011 – Antal and Tillé (2011) direct bootstrap,
– AT2014 – Antal and Tillé (2014) direct bootstrap,
– BMM – Barbiero, Manzi and Mecatti (2015) bootstrap,
– H – Holmberg (1988) bootstrap,
– Z – Żądło (2021) bootstrap,
– Q – Quatember (2014) bootstrap,

– SP – Sverchkov and Pfeffermann (2004) bootstrap,
– BMxb1 – Barbiero and Mecatti (2010) x-balanced 1 bootstrap,
– BMxb2 – Barbiero and Mecatti (2010) x-balanced 2 bootstrap.

Table 1. The Estimated Design-precision of the HT Estimator of the Population Total

Bootstrap	Estimated Design-standard Error	Estimated Relative Design-standard Error (in %)	Execution Time of 1,000 Iterations (in sec.)
BM0.5	1,338.6	2.49	0.019
AT2011	1,347.8	2.50	0.018
AT2014	1,352.4	2.51	0.001
BMM	1,294.4	2.40	0.052
H	1,327.7	2.47	0.050
Z	1,340.0	2.49	0.007
Q	1,380.2	2.56	0.001
SP	1,357.8	2.52	0.033
BMxb1	1,331.8	2.47	0.018
BMxb2	1,370.1	2.54	0.019

Source: the author's own computations using *pipsboot* R package (Kucharski & Żądło, 2021).

The estimated relative design-standard errors presented in Table 1 are similar to each other. This suggests that they have similar stochastic properties, though that should be confirmed in the simulation studies. In such a case, the time-consuming algorithms can be of lower interest, especially for large populations, where bootstrap algorithms based on the plug-in approach require the physical creation of a pseudo-population. Therefore, faster algorithms including Żądło (2021) may be preferable.

8. Applications – Part 2

In this section we use the same dataset as in the previous one. In this case, the inference is based on a single stratified sample of a size 20% of the population size ($N = 281$) to have enough sample observations to estimate all model parameters. The population total is predicted under the special case of model (2), where RMT85 logarithms are explained by P75 logarithms (the variables are described in the previous section). This model is the nested error linear mixed model with subpopulation-specific random effects, with subpopulations defined as regions (e.g., Żądło, 2015, p. 43). The model parameters are significant at a 0.05 significance level (the results are based on permutation tests). These tests are known to have good properties both for testing fixed effects (Krzciuk & Żądło, 2014a) and random

components (Krzciuk & Żądło, 2014b). What is more, there is no evidence to reject the null hypothesis on the normality of random effect and random components (the test procedure proposed by Jacqmin-Gadda *et al*. (2007) has been conducted).

The plug-in predictor is used here to predict the population total under the model being considered (see e.g., Chwila & Żądło, 2022, p. 20). However, its potential application is greater – it allows one to predict any given function of the population vector of the variable of interest, such as quantiles and distribution functions (e.g., Stachurski, 2021). Based on the sample under consideration, the value of the predictor of the population total of municipal taxation revenues is computed (it comes out to 54,022.03 Swedish kronor). Although we consider the use of bootstrap for linear mixed models, it also has successful applications for more general models, as shown e.g., by Wolny-Dominiak (2017) and Wolny-Dominiak and Żądło (2022a).

To estimate the prediction-accuracy, we use different bootstrap algorithms available in *qape* R package (Wolny-Dominiak & Żądło, 2022b). The assumed number of iterations is 1,000 for parametric, residual, and the first level of the double bootstrap, and 500 for the second level of the double bootstrap.

In sections 4, 5 and 6, various bootstrap MSE estimators were presented. The superscripts used in their notations are used as the names of bootstrap algorithms in Table 2, along with the appropriate equation numbers.

Table 2. Estimated Prediction Accuracy of the Plug-in Predictor of the Population Total

Bootstrap	Estimated Prediction-RMSE	Estimated Relative Prediction-RMSE (in %)	Execution Time[a] (in sec.)
Parametric – equation (11)	725.5	1.35	23.17
Residual – as in Algorithm 4	716.8	1.34	36.01
db-B2 – equation (18)	651.6	1.22	11,516[b]
db-B2-mod – equation (28)	811.8	1.51	
db-B2-HM – equation (24)	655.3	1.22	
db-1 – equation (20)	633.9	1.18	
db-1-mod – equation (29)	854.1	1.60	
db-1-EF – equation (25)	633.9	1.18	
db-telesc – equation (22)	634.1	1.18	
db-telesc-mod – equation (30)	830.8	1.55	
db-telesc-EF – equation (22)	634.1	1.18	

[a] Of 1,000 iterations for parametric, residual, and the first level of the double bootstrap, and 500 for the second level of the double bootstrap (parallel computing is used). [b] The time of the execution of doubleBootFuture{qape}function which computes all double bootstrap MSE estimators.

Source: the author's own computations using *qape* R package (Wolny-Dominiak & Żądło, 2022b).

Firstly, the results of db-1 and its modified version db-1-EF MSE estimators are identical, as are the results of db-telesc and its modified version db-telesc-EF. This means that the conditions implying possible corrections in (25) and (26) have not been met. Secondly, the results of the parametric and residual MSE estimators are as follows. The first one is based on the normality assumptions of random effects and random components, while the second is not. However, the normality assumption is met, and the results are comparable. Thirdly, the results of all double bootstrap estimators (except our proposals) are similar and smaller than the value of the parametric bootstrap estimators, since they are bias-corrected versions of the parametric bootstrap estimator. Finally, the values of our proposals given by (28), (29), and (30) are higher than the rest of the results, which may indicate that they are positively biased. Even if they overestimate the prediction MSE on average, they may be useful proposals because they provide pessimistic estimates of prediction accuracy. However, further Monte Carlo simulation analyses in this area should be conducted.

9. Conclusion

We have presented a variety of bootstrap algorithms used in survey sampling to estimate design- and prediction-accuracy. I use their computer implementations, available as two R packages on R CRAN and GitHub. Three double bootstrap MSE estimators are proposed and analysed in the application of the real data. Most of the application results within each approach are similar, suggesting that the stochastic properties of variance and MSE estimators are similar. However, they cannot be generalised for other population datasets directly, though the R packages *pipsboot* and *qape* make it easy to use these methods for any dataset. Further research should include Monte Carlo simulation studies, in which the biases and accuracies of variance and MSE estimators should be analysed. What is more, design-based considerations can be extended to other sampling designs, and the model-based results to other models, including the problem of model misspecification. The analyses could also be extended to consider the estimation and prediction of other characteristics than population total.

Conflict of Interest

The author declares no conflict of interest.

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Kierunek zmian procesów globalizacyjnych zachodzących w Polsce w obliczu pandemii COVID-19 oraz agresji Rosji na Ukrainę

Changes in Globalisation Processes in Poland in the Face of the COVID-19 Pandemic and Russia's Aggression against Ukraine

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ABSTRACT

Objective: To examine globalisation processes in Poland in the years 2000–2022 and to determine the impact of the COVID-19 pandemic and Russia's aggression against Ukraine on the further development of those processes.
Research Design & Methods: The article analyses elements included in the KOF Globalisation Index describing economic, social and political globalisation in the years 2000–2022.
Findings: In the years 2000–2020, Poland was highly internationalised politically, semi--internationalised socially and the least internationalised economically. The outbreak of the COVID-19 pandemic and Russia's aggression against Ukraine clipped international trade, while the value of portfolio investments and FDI in Poland increased. At the same time, the number of tourists visiting Poland declined significantly, civil liberties were restricted during the pandemic,

and Poland's media freedom ranking fell, as did the balance of immigrants seeking permanent residence in the country. In the face of Russia's aggression against Ukraine, many countries have imposed sanctions on Russia, strengthening international cooperation.

Implications/Recommendations: The COVID-19 pandemic and the war in Ukraine sped up some economic and social processes but slowed others. Changes in globalisation processes in Poland in the coming years will depend on the duration of the Ukrainian-Russian conflict. There is a need for further research on these issues.

Contribution: This study will help understand the new challenges Poland is facing from these crises.

Article type: original article.

Keywords: globalisation, KOF Globalisation Index, Ukrainian-Russian conflict, COVID-19 pandemic, globalisation processes in Poland.

JEL Classification: F51, F60, F63.

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1. Wprowadzenie

Globalizacja oznacza wzrost współzależności i wzajemnego oddziaływania państw, przedsiębiorstw i ludzi na świecie. Procesy globalizacyjne przejawiają się przede wszystkim w rozwoju handlu międzynarodowego i inwestycji zagranicznych. Dzięki nim wzrasta szybkość przepływu kapitału i usług, zwiększa się mobilność ludzi, a także pojawiają się duże możliwości przyspieszania wzrostu gospodarczego. Od początku XXI w. widoczny jest znaczący rozwój procesów globalizacyjnych w Polsce, głównie wskutek przystąpienia do Unii Europejskiej. W 2020 r. wybuch pandemii COVID-19 sprawił, że w niektórych obszarach gospodarczych i społecznych nastąpiło przyspieszenie wspomnianych procesów, a w innych ich spowolnienie, co przyczyniło się do zmiany charakteru globalizacji. Następnie wybuch wojny w Ukrainie w 2022 r. spowodował napływ imigrantów z Ukrainy do Polski, przyczynił się do zahamowania handlu międzynarodowego, a także wpłynął na sferę finansową w Polsce.

Celem artykułu jest przedstawienie procesów globalizacyjnych, które zaszły w Polsce w latach 2000–2022, oraz określenie wpływu pandemii COVID-19 i agresji Rosji na Ukrainę na dalszy rozwój procesów globalizacyjnych w Polsce. Metodologia badawcza objęła analizę elementów wchodzących w skład indeksu globalizacji KOF, które opisują globalizację ekonomiczną, społeczną i polityczną, w latach 2000–2022. Artykuł stanowi próbę odpowiedzi na następujące pytanie badawcze: jak pandemia COVID-19 oraz agresja Rosji na Ukrainę wpłynęły na procesy globalizacyjne zachodzące w Polsce?

2. Istota zjawiska globalizacji

Termin „globalizacja" powstał w połowie lat 80. XX w. i określał głębokie przemiany w obszarach organizacji produkcji, konsumpcji oraz inwestycji, będące następstwem ekonomicznej liberalizacji i zmniejszającej się roli państwa w gospodarce światowej, które doprowadziły do nasilenia się współzależności rynków i produkcji w poszczególnych krajach (Bąkiewicz, 2016, s. 6). Globalizacja oznacza zatem integrację gospodarki światowej (Gilpin, 2001, s. 264). Obecnie odnosi się ona nie tylko do gospodarki, lecz oznacza także intensyfikację stosunków społecznych na świecie. Globalizacja łączy ze sobą odległe miejsca w takiej mierze, że na wydarzenia lokalne wpływają zdarzenia, do których dochodzi w odległości wielu kilometrów, i *vice versa* (Giddens, 1990, s. 21).

Procesy globalizacyjne obejmują zjawiska gospodarcze, polityczne i społeczne, które swoim zasięgiem przekraczają granice jednego kraju (Czerny, 2005, s. 18). W gospodarce globalnej czynniki produkcji (bogactwa naturalne, kapitał, technologia, siła robocza) oraz produkty i usługi krążą po całym świecie (Maśloch, 2005, s. 17). Budowanie sieci relacji zachodzi równocześnie na wszystkich poziomach: mikro (ludzie, przedsiębiorstwa), mezo (sektory, regiony), makro (gospodarki, organizacje międzynarodowe) oraz meta (społeczności, cywilizacje, systemy) (Rosińska--Bukowska, 2014, s. 98).

Postępujące procesy globalizacyjne przyczyniają się do rozwoju technologicznego. Wzrost liczby danych oraz ich dostępności, a jednocześnie ich zaprogramowana selekcja prowadzą do uzyskania jakościowo nowych możliwości. Z postępu technologicznego korzystają przede wszystkim korporacje transnarodowe, które najszybciej pozyskują zasoby umożliwiające dopasowywanie i przekształcanie danych w różnych systemach, w celu uzyskania przewagi konkurencyjnej na globalnym rynku (Nowak, 2018, s. 34). Postęp technologiczny powoduje obniżenie kosztów komunikacji i transportu, co sprzyja wzrostowi międzynarodowego handlu oraz inwestycji zagranicznych. Otwarcie gospodarki na świat stwarza możliwość upowszechnienia nowoczesnych technologii produkcyjnych, wiąże się z wprowadzaniem innowacyjnych rozwiązań w wielu płaszczyznach życia, aktywizuje gospodarczo, integruje osoby o odmiennej kulturze, a także umożliwia swobodne przemieszczanie się w coraz krótszym czasie (Grzybowska, 2013, s. 11–18).

3. Rozwój procesów globalizacyjnych w Polsce w latach 2000–2020

Indeks globalizacji KOF skonstruowany przez A. Drehera (2006) określa poziom globalizacji ekonomicznej, społecznej i politycznej dla ponad 200 krajów świata. Na rys. 1 przedstawiono wartości indeksu globalizacji KOF dla Polski w latach 2000–2020.
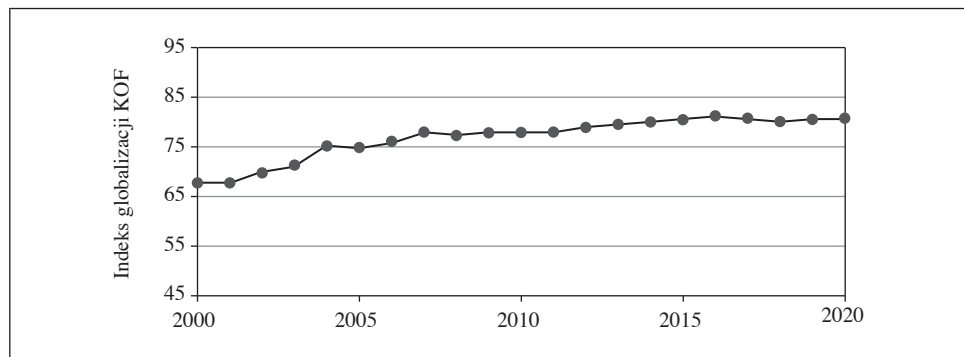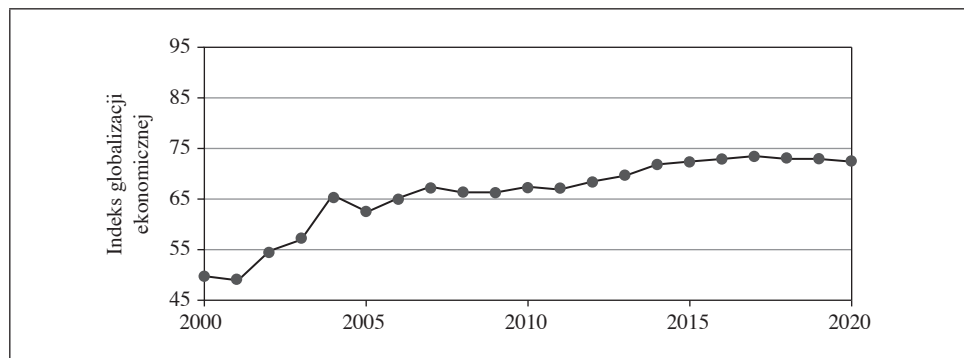
Rys. 1. Indeks globalizacji KOF dla Polski w latach 2000–2020

Źródło: opracowanie własne na podstawie (KOF Globalisation Index, 2022).

W badanym okresie indeks globalizacji KOF wzrósł o 13 pkt. Największa dynamika wzrostu miała miejsce w latach 2000–2005, wówczas indeks wzrósł o 11%, m.in. dzięki przystąpieniu Polski do Unii Europejskiej. Kolejny istotny wzrost wartości indeksu odnotowano w okresie 2010–2015, po kryzysie finansowym – wówczas dynamika wzrostu kształtowała się na poziomie 4%. W latach 2016–2020 indeks globalizacji KOF wynosił średnio 81 pkt i charakteryzował się bardzo niską zmiennością.

Pierwszym elementem indeksu globalizacji KOF jest indeks globalizacji ekonomicznej, którego wartości w latach 2000–2020 zostały przedstawione na rys. 2.

Rys. 2. Indeks globalizacji ekonomicznej dla Polski w latach 2000–2020

Źródło: opracowanie własne na podstawie (KOF Globalisation Index, 2022).

Indeks globalizacji ekonomicznej dla Polski wzrósł w badanym okresie o 23 pkt, co stanowi największy wzrost, jeśli chodzi o trzy indeksy wchodzące w skład

głównego indeksu globalizacji KOF. Największa dynamika wzrostu miała miejsce w latach 2000–2005, wówczas indeks wzrósł o 25%. W okresie 2006–2010 dynamika wzrostu kształtowała się na poziomie 3%, a w latach 2011–2015 na poziomie 8%. Indeks globalizacji ekonomicznej w latach 2016–2020 wynosił średnio 73 pkt i charakteryzował się niską zmiennością.

Handel zagraniczny odgrywa decydującą rolę, jeśli chodzi o wzrost gospodarczy każdego państwa. Na początku XXI w. aktywność eksportowa Polski była na stosunkowo niskim poziomie. Pierwszy znaczący wzrost eksportu dóbr i usług miał miejsce w 2003 r. i był spowodowany integracją Polski z UE oraz dywersyfikacją partnerów handlowych (Drela, Malkowska i Zieziula, 2019, s. 41). Rozwój handlu był uwarunkowany wzrostem znaczenia dużych przedsiębiorstw, w szczególności korporacji transnarodowych, posiadających znaczny udział w międzynarodowej wymianie handlowej. W ostatnich latach widoczny jest również postęp w zakresie technologii, rozwój specjalizacji oraz kooperacji w produkcji, a także przyspieszenie tempa wzrostu produkcji nowych towarów. Zmniejszenie kosztów transportu i postęp technologiczny pozwoliły również na rozwój międzynarodowego handlu usługami, którego przedmiotem są zwłaszcza usługi specjalistyczne wymagające wysokich kwalifikacji zawodowych (Choroś-Mrozowska i Clowes, 2016, s. 99–100). Wśród towarów eksportowanych z Polski największy udział mają maszyny, urządzenia i sprzęt transportowy, a do najczęściej eksportowanych usług należą usługi transportowe, telekomunikacyjne, informatyczne i informacyjne, a także usługi prawne, księgowe oraz doradztwo w zakresie zarządzania i public relations (GUS, 2021a).
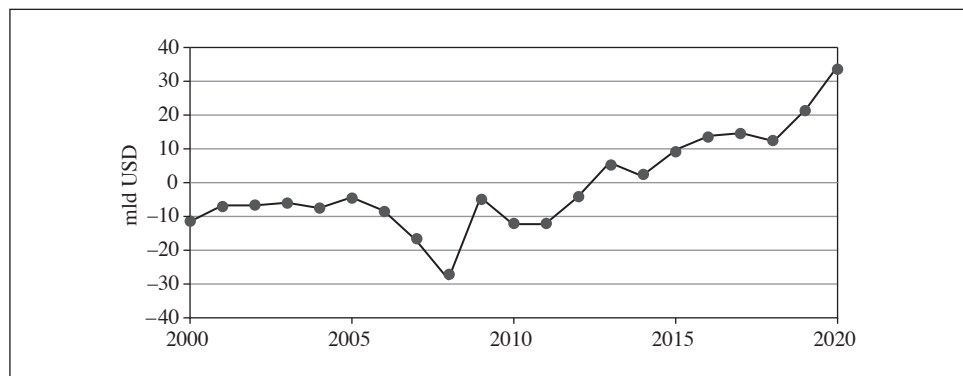
Rys. 3. Bilans handlu zagranicznego towarami i usługami Polski w latach 2000–2020
Źródło: opracowanie własne na podstawie (World Bank Open Data, 2022).

Od 2013 r. bilans handlu zagranicznego towarami i usługami w Polsce jest dodatni. W 2020 r. wyniósł on 34,3 mld USD, co stanowi wzrost o 55,5% w porów-

naniu z rokiem 2019 (zob. rys. 3). Zdolność polskich przedsiębiorstw do konkurowania na rynkach UE rośnie, zarówno dzięki konkurencji cenowej, jak i lepszej jakości produktów oraz innowacyjnych ofert (Drela, Malkowska i Zieziula, 2019, s. 46).

Na wartość indeksu globalizacji ekonomicznej mają wpływ również bezpośrednie inwestycje zagraniczne (BIZ) oraz inwestycje portfelowe, których wartości w latach 2000–2020 przedstawiono na rys. 4 i rys. 5.
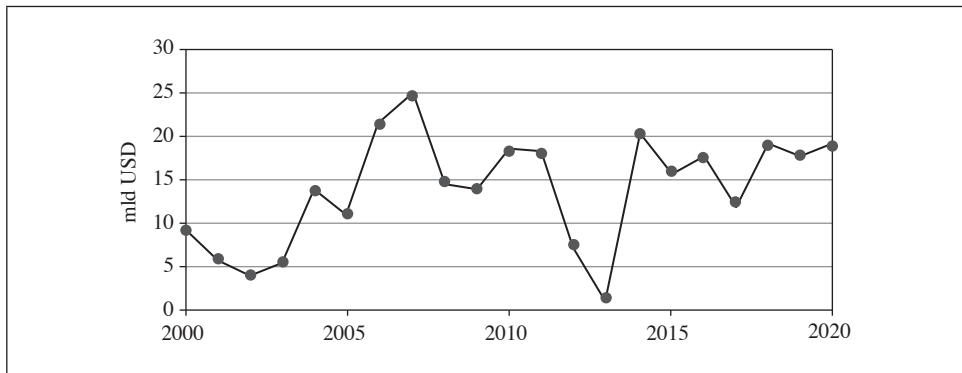

Rys. 4. Napływ kapitału w formie BIZ do Polski w latach 2000–2020
Źródło: opracowanie własne na podstawie (World Bank Open Data, 2022).

Polska od lat 90. XX w. jest importerem netto BIZ. W ciągu ostatnich trzech dekad odnotowano znaczący napływ BIZ – po przystąpieniu Polski do UE następował systematyczny wzrost liczby firm z udziałem kapitału zagranicznego. Największy spadek wartości BIZ miał miejsce w latach 2012–2013, co było skutkiem wycofywania kapitału przez udziałowców zagranicznych w związku z kryzysem finansowym oraz zmniejszeniem wartości udzielanych kredytów (Przystupa, 2013, s. 8). Od 2015 r. widoczne jest zahamowanie ekspansji BIZ i odnotowywany jest spadek liczby firm z udziałem kapitału zagranicznego w Polsce (Cieślik, 2019, s. 259–260). Przeprowadzone badania empiryczne wskazują, że większość gałęzi przemysłu i usług w Polsce znajduje się w drugiej fazie rozwoju BIZ, co oznacza, że napływające BIZ szybko rosną, a odpływające BIZ dopiero zaczynają się pojawiać lub zwiększać swoją wartość. Wraz z upływem czasu niektóre branże przechodzą do fazy trzeciej, którą cechuje dalszy wzrost odpływających BIZ i wyhamowywanie wzrostu napływających BIZ (Budnikowski i in., 2022, s. 33). W latach 2018–2020 nastąpiła stabilizacja napływu BIZ do Polski na poziomie 17–19 mld USD rocznie.

Wartość polskich inwestycji portfelowych za granicą po przystąpieniu Polski do UE systematycznie rosła; pierwszy odpływ polskiego kapitału z zagranicy miał miejsce w 2008 r. po wybuchu kryzysu finansowego. Z kolei wartość zagranicznych inwestycji portfelowych w Polsce była na wysokim poziomie w okresie 2009–2012, ponieważ skutki kryzysu finansowego dotknęły Polskę w znacznie mniejszym stopniu niż inne kraje europejskie. Od 2012 r. wartość zagranicznych inwestycji portfelowych w Polsce zaczęła spadać; natomiast w latach 2012–2015 wzrosła wartość polskich inwestycji portfelowych za granicą. Największy spadek polskich inwestycji portfelowych za granicą odnotowano w 2016 r., co było rezultatem m.in. zmian w strukturach grup kapitałowych i związanej z nimi likwidacji funduszy inwestycyjnych (Narodowy Bank Polski, 2017). Również w latach 2018–2020 zanotowano odpływ polskiego kapitału z zagranicy oraz odpływ zagranicznego kapitału w postaci inwestycji portfelowych z Polski.
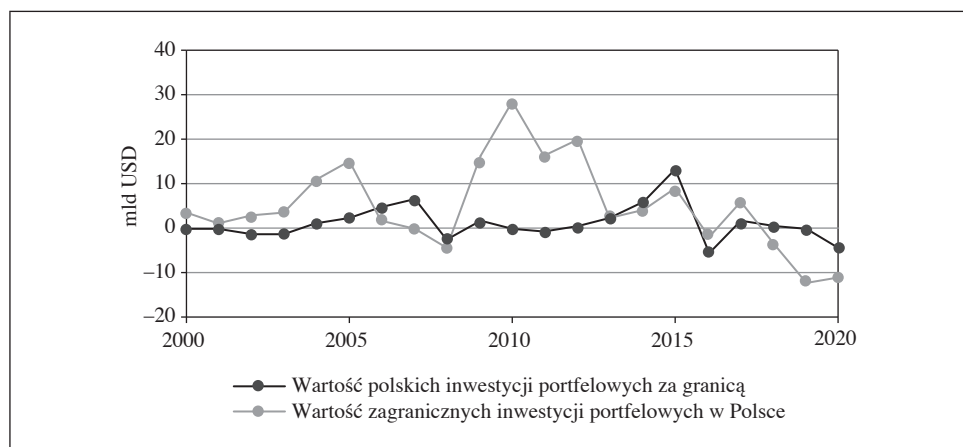
Rys. 5. Inwestycje portfelowe w Polsce oraz polskie inwestycje portfelowe za granicą w latach 2000–2020

Źródło: opracowanie własne na podstawie (Narodowy Bank Polski, 2021).

Systematyczny wzrost bilansu handlu zagranicznego i stabilizacja napływu BIZ do Polski miały pozytywny wpływ na indeks globalizacji ekonomicznej, natomiast spadek zarówno wartości inwestycji portfelowych w Polsce, jak i polskich inwestycji portfelowych za granicą wpłynęły na ten indeks negatywnie.

Kolejnym elementem indeksu globalizacji KOF jest indeks globalizacji społecznej, którego wartości w latach 2000–2020 zostały przedstawione na rys. 6.

Indeks globalizacji społecznej wzrósł o 15 pkt w badanym okresie. Największa dynamika wzrostu miała miejsce w latach 2000–2005 – wówczas indeks globali-

zacji społecznej wzrósł o 15%. W okresie 2006–2010 dynamika wzrostu kształto-
wała się na poziomie 7%, a w latach 2011–2015 na poziomie 4%. Najwyższą wartość
tego indeksu, wynoszącą 80 pkt, odnotowano w 2016 r. W tym samym roku wartość
indeksu globalizacji społecznej zaczęła spadać i w 2020 r. wyniosła 77 pkt.
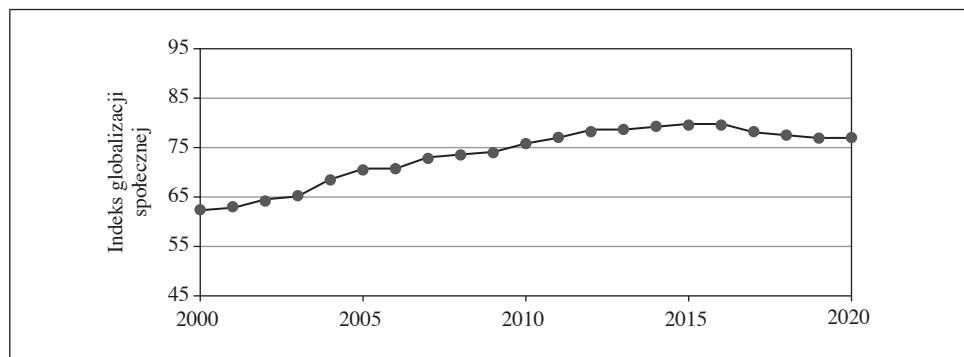
Rys. 6. Indeks globalizacji społecznej dla Polski w latach 2000–2020
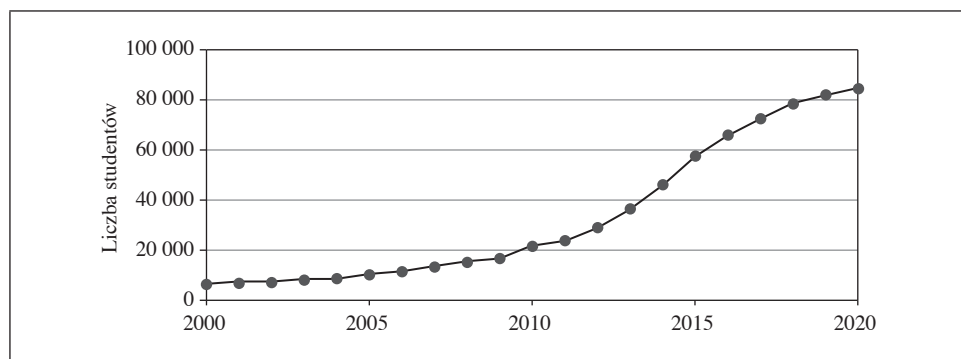Źródło: opracowanie własne na podstawie (KOF Globalisation Index, 2022).

Pierwszym elementem globalizacji społecznej jest globalizacja interpersonalna.
Od początku XXI w. nastąpiło zwiększenie mobilności ludzi, a sektor turystyczny
zaczął wykazywać się wyjątkową dynamiką (Ślęzak, 2018, s. 51). Jedną z najwięk-
szych na świecie branż gospodarki jest obecnie turystyka. Od 2009 do 2019 r.
wzrosła liczba turystów odwiedzających Polskę (zob. rys. 7), a tym samym zwięk-
szyły się przychody z turystyki (World Bank Open Data, 2022).
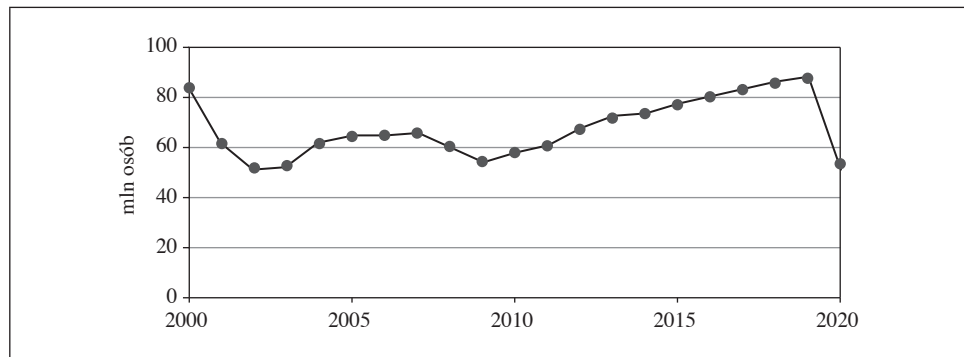
Rys. 7. Podróże nierezydentów do Polski w latach 2000–2020
Źródło: opracowanie własne na podstawie (World Bank Open Data, 2022).

W 2020 r. nastąpiło ograniczenie ruchu turystycznego na całym świecie w związku z pandemią COVID-19. Sytuacja kryzysowa nie wpłynęła jednak znacząco na widoczny od początku XXI w. wzrost liczby studentów zagranicznych w Polsce (zob. rys. 8).

Rys. 8. Liczba studentów zagranicznych w Polsce w latach 2000–2020
Źródło: opracowanie własne na podstawie (GUS, 2021b).

W roku akademickim 2020/2021 w Polsce studiowało 84,7 tys. studentów zagranicznych, czyli 2,5 tys. więcej niż w roku poprzednim. Najliczniejszą grupą byli studenci z Ukrainy i Białorusi. Studenci zagraniczni stanowili ok. 7% ogółu studentów w kraju (GUS, 2021b).

Migracje międzynarodowe wpływają na rozwój społeczny i gospodarczy. Na początku XXI w. Polska była postrzegana jako kraj emigracyjny (Matkowska, 2011, s. 89–90). Migracje Polaków za granicę najczęściej miały charakter zarobkowy i były związane z chęcią poprawy sytuacji ekonomicznej, polepszenia warunków życia i stabilizacją (Wojtaszak, 2022, s. 178). Głównymi kierunkami emigracji Polaków od wielu lat są Wielka Brytania i Niemcy. Z kolei imigranci przybywający do Polski to w większości osoby powracające z emigracji (GUS, 2020). Skala imigracji do Polski od 2015 r. wzrosła przez migracje Ukraińców związane z wybuchem konfliktu we wschodniej Ukrainie (Jaroszewicz, 2015, s. 4).

Saldo migracji na pobyt stały od 2016 r. jest dodatnie, co oznacza, że liczba imigracji przewyższa liczbę emigracji (zob. rys. 9). W 2020 r. saldo migracji zagranicznych na pobyt stały wyniosło 4,5 tys. Polska z kraju typowo emigracyjnego przekształca się w kraj emigracyjno-imigracyjny (GUS, 2020).

W obszarze globalizacji społecznej niekorzystną tendencją jest spadek Polski w rankingu wolności mediów World Press Freedom Index. W 2015 r. Polska znajdowała się na 18. miejscu w rankingu, w kolejnych latach pozycja ta znacząco spadła, a w 2020 r. Polska zajęła 62. miejsce (Reporters without Borders, 2022).
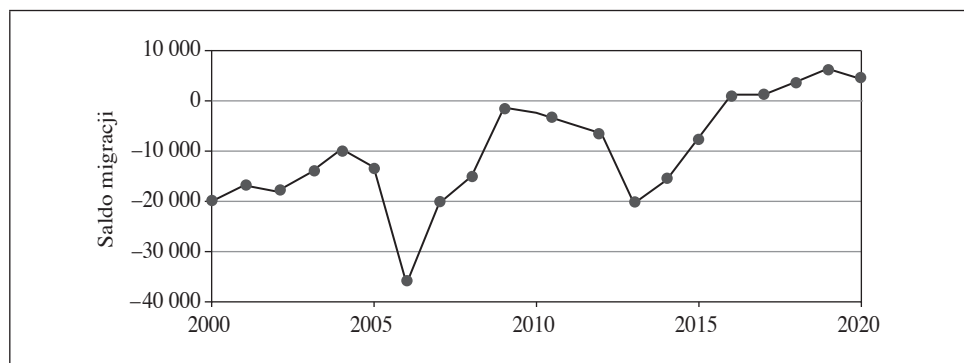
Rys. 9. Saldo migracji zagranicznych na pobyt stały w Polsce w latach 2000–2020
Źródło: opracowanie własne na podstawie (Bank Danych Lokalnych, 2022).

W przypadku globalizacji społecznej pod uwagę brany jest również wskaźnik swobód obywatelskich, który informuje o stopniu wolności słowa i zrzeszania się, praworządności i autonomii osobistej (Freedom House, 2021). Jego niższa wartość wskazuje na mniej swobód.
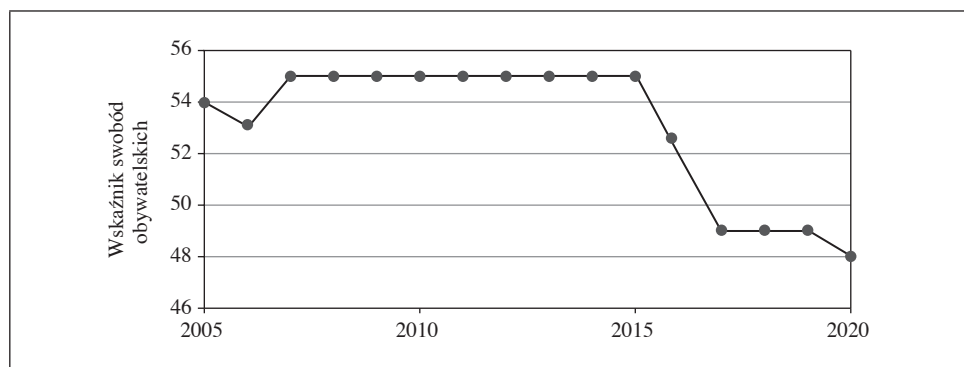

Rys. 10. Wskaźnik swobód obywatelskich dla Polski w latach 2005–2020
Źródło: opracowanie własne na podstawie (Our World in Data, 2022).

Wskaźnik ten jest publikowany od 2005 r. W latach 2015–2020 jego wartość dla Polski znacząco spadła (zob. rys. 10), co negatywnie wpłynęło na wartość indeksu globalizacji społecznej.

Ostatnim elementem indeksu globalizacji KOF jest indeks globalizacji politycznej, którego wartości dla Polski w latach 2000–2020 zostały przedstawione na rys. 11.
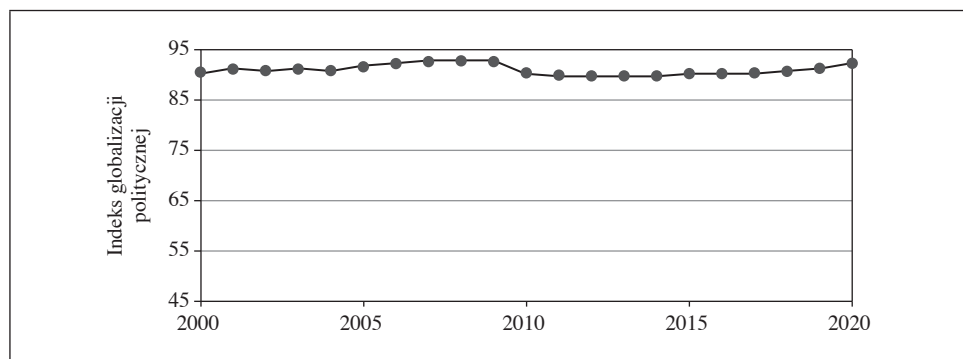
Rys. 11. Indeks globalizacji politycznej dla Polski w latach 2000–2020

Źródło: opracowanie własne na podstawie (KOF Globalisation Index, 2022).

Indeks globalizacji politycznej w badanym okresie charakteryzował się bardzo niską zmiennością i przyjmował najwyższe wartości spośród pozostałych indeksów wchodzących w skład głównego indeksu globalizacji KOF. Średnia wartość indeksu globalizacji politycznej w latach 2000–2020 wynosiła 91 pkt. Wartość indeksu wzrosła o 2 pkt w badanym okresie i w 2020 r. wyniosła 93 pkt.

Na wysoki poziom globalizacji politycznej w Polsce wpływają m.in.: liczne ambasady znajdujące się na terenie kraju (96), członkostwo w UE, ONZ, NATO, Grupie Wyszehradzkiej, OECD czy Inicjatywie Środkowoeuropejskiej, liczba organizacji pozarządowych zorientowanych międzynarodowo (ok. 12,5 tys.), a także liczba osób zaangażowanych w misje pokojowe – w 2020 r. ponad 115 tys. polskich żołnierzy wzięło udział w 58 misjach pokojowych i humanitarnych (Ministerstwo Spraw Zagranicznych, 2020).

Podsumowując, Polska jest znacznie bardziej umiędzynarodowiona w obszarze politycznym niż społecznym i ekonomicznym, jednak to w sferze ekonomicznej nastąpił największy wzrost indeksu globalizacji w badanym okresie, co było spowodowane rozwojem handlu zagranicznego i wzrostem inwestycji napływających do kraju. Natomiast od 2016 r. widoczny jest spadek indeksu globalizacji społecznej, do którego przyczyniły się m.in. spadek Polski w rankingu wolności mediów i ograniczenie swobód obywatelskich.

4. Wpływ pandemii COVID-19 oraz konfliktu ukraińsko-rosyjskiego na polską gospodarkę i zachodzące w niej procesy globalizacyjne

Wybuch pandemii w 2020 r. skutkował wprowadzeniem licznych ograniczeń aktywności społecznej i gospodarczej. Restrykcje wpłynęły negatywnie na światową gospodarkę, w niektórych krajach wstrzymano produkcję, co spowodowało

zaburzenia w funkcjonowaniu handlu międzynarodowego i globalnych łańcuchów dostaw (Wąsiński i Wnukowski, 2020, s. 35). Ponadto ograniczono mobilność ludzi na świecie zarówno w sensie turystycznym, jak i zawodowym oraz edukacyjnym.

Polska gospodarka w 2021 r. zmagała się z wyzwaniami, takimi jak kryzys gospodarczo-zdrowotny czy rosnąca inflacja. Agresja Rosji na Ukrainę w 2022 r. spowodowała problemy z dostawami żywności oraz wywołała kryzys energetyczny, co istotnie przyczyniło się do dalszego wzrostu inflacji (Celi i in., 2022, s. 141–147). Należy także dodać, że w Europie wystąpił największy kryzys uchodźczy od czasów II wojny światowej (Geograficzno-polityczny Atlas Polski, 2022).

Pandemia COVID-19 oraz konflikt ukraińsko-rosyjski miały znaczący wpływ na gospodarkę globalną i procesy, które w niej zachodzą. Zarówno wybuch pandemii, jak i wojna w Ukrainie wpłynęły negatywnie na handel zagraniczny.
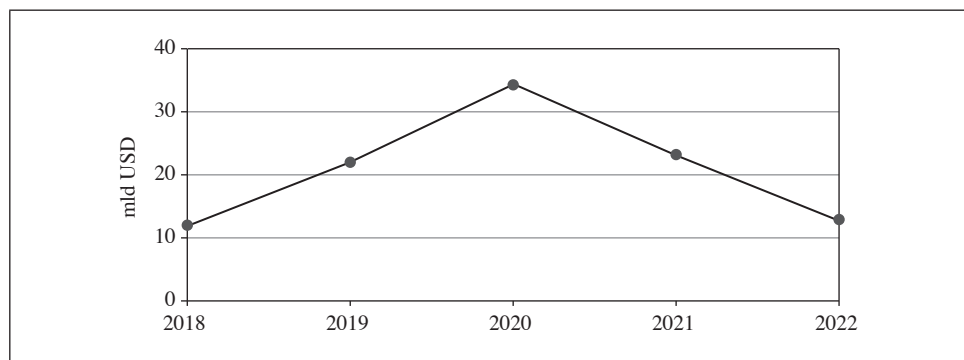
Rys. 12. Bilans handlu zagranicznego towarami i usługami Polski w latach 2018–2022
Źródło: opracowanie własne na podstawie (World Bank Open Data, 2022).

Handel zagraniczny w okresie pandemii był prowadzony w warunkach licznych ograniczeń w zakresie działalności gospodarczej. Mimo to w pierwszym roku pandemii Polska zanotowała ponadprzeciętne wyniki eksportowe, z uwagi na skokową deprecjację złotówki wobec euro i dolara (zob. rys. 12). Zatem jednym z głównych czynników stymulujących polski eksport w czasie pandemii był kurs walutowy. Kierunki geograficzne eksportu towarów z Polski w tym okresie uległy zdywersyfikowaniu, natomiast w polskim imporcie nastąpił wzrost koncentracji na dziesięciu najważniejszych partnerach handlowych. W czasie pandemii usługi oparte w całości na przemieszczaniu się osób i ich przebywaniu za granicą zostały ograniczone, co wpłynęło negatywnie na bilans handlu zagranicznego usługami (Dziembała i in., 2022, s. 16–22).

W 2021 r. oraz 2022 r. nastąpił spadek bilansu handlu zagranicznego towarami. Saldo obrotów towarowych było wówczas ujemne i wynosiło odpowiednio

–8,7 mld USD i –25,5 mld USD. Z kolei wartość eksportu usług, po wyhamowaniu w pierwszym roku pandemii, w kolejnych latach wzrosła, dzięki czemu bilans handlu zagranicznego towarami i usługami był dodatni pomimo znaczącego spadku w porównaniu z 2020 r. (Narodowy Bank Polski, 2023).

W 2022 r. saldo obrotów towarowych wyraźnie spadło, na co wpływ miała agresja Rosji na Ukrainę. Wybuch wojny spowodował zakłócenia w łańcuchach produkcyjnych – znalazło to odzwierciedlenie w wydłużonych terminach dostaw i znacznie wyższych cenach. W 2022 r. widoczna była zmiana zarówno w bilansie handlowym, jak i w kierunkach przepływu towarów. Z listy najważniejszych rynków zbytu zniknęła Rosja, a Ukraina zajęła 12. miejsce. Eksport w tym kierunku wzrósł niemal o połowę – 47,2% (Polski Instytut Ekonomiczny, 2023a).

Jeśli chodzi o wyniki polskiego handlu zagranicznego w 2022 r., dużą rolę odgrywały kursy walut i sytuacja na rynkach finansowych. Średnia inflacja konsumencka w Polsce w 2021 r. wyniosła 5,1%, a w 2022 r. 14,4%. Jako przyczyny wzrostu inflacji w Polsce należy wymienić ożywienie aktywności gospodarczej po pandemii, wojnę w Ukrainie oraz związane z nią przerwy w dostawach wielu surowców, a także wzrost cen gazu i ropy naftowej na świecie. Wysokie ceny żywności spowodowane były wzrostem kosztów transportu oraz wstrzymaniem dostaw zbóż z Ukrainy (Kępka i Pająk, 2022).

Wzrost inflacji w Polsce przełożył się na wzrost stóp procentowych. Tym samym wartość inwestycji portfelowych w Polsce w okresie 2021–2022 wzrosła w porównaniu z latami 2019–2020 (zob. rys. 13).
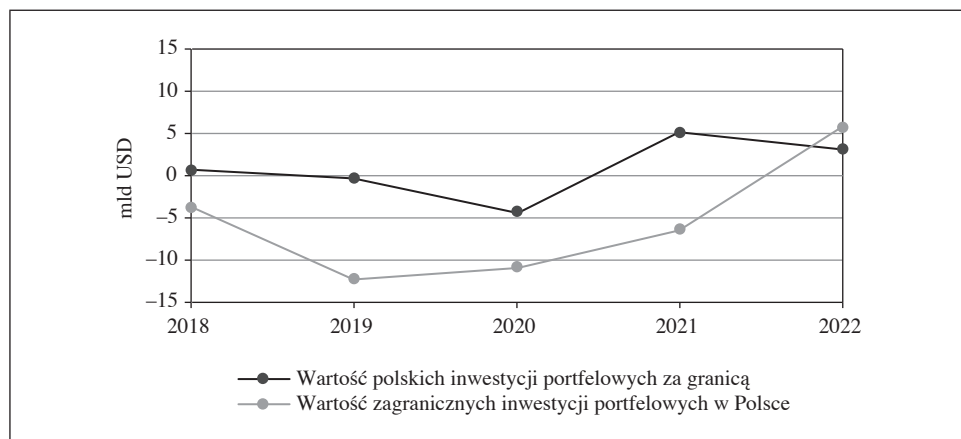

Rys. 13. Inwestycje portfelowe w Polsce oraz polskie inwestycje portfelowe za granicą w latach 2018–2022

Źródło: opracowanie własne na podstawie (Narodowy Bank Polski, 2023).

W 2022 r. zarejestrowano duży napływ kapitału zagranicznego inwestowanego w polskie papiery wartościowe. Dodatnie saldo zagranicznych inwestycji portfelowych wyniosło 5,8 mld USD i było rezultatem napływu inwestycji na polski rynek papierów dłużnych (Narodowy Bank Polski, 2023).

Wartość polskich inwestycji portfelowych za granicą znacząco wzrosła w 2021 r. – wówczas rezydenci nabywali głównie papiery udziałowe, dzięki czemu saldo inwestycji portfelowych za granicą było dodatnie i wyniosło 5 mld USD. W 2022 r. nastąpił z kolei odpływ kapitału z zagranicznego rynku papierów udziałowych. Rezydenci zainwestowali wówczas 4,1 mld USD w zagraniczne papiery dłużne, co również było spowodowane wzrostem stóp procentowych (Narodowy Bank Polski, 2023).

W 2021 r. oraz 2022 r. odnotowano także napływ kapitału zagranicznego do Polski w formie BIZ (zob. rys. 14).
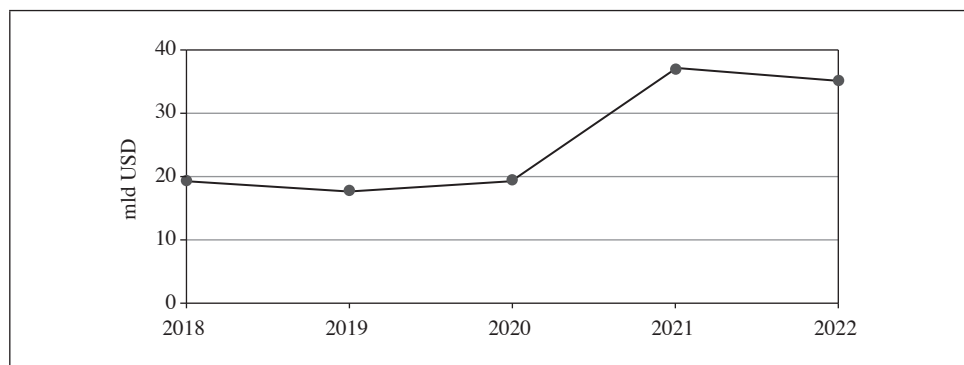
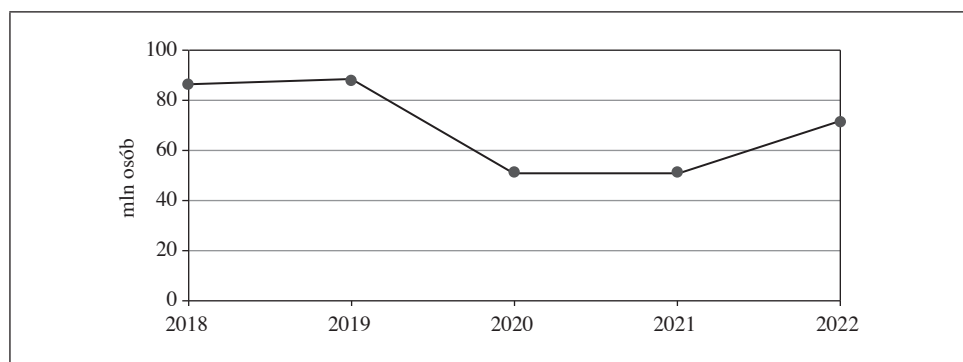Rys. 14. Napływ kapitału w formie BIZ do Polski w latach 2018–2022
Źródło: opracowanie własne na podstawie (World Bank Open Data, 2022).

W latach 2018–2020 wartość BIZ w Polsce utrzymywała się na podobnym poziomie. Ożywienie gospodarcze w 2021 r. przyczyniło się do wzrostu strumieni BIZ napływających do krajów rozwiniętych względem krajów rozwijających się. Polski Instytut Ekonomiczny (2023b) wskazuje, że 134% więcej BIZ napłynęło do krajów rozwiniętych w 2021 r. (r/r), natomiast wartość BIZ w Polsce wzrosła niemal dwukrotnie w porównaniu z 2020 r.

Rok 2022 nie był sprzyjający, jeśli chodzi o podejmowanie decyzji inwestycyjnych, z uwagi na rosnącą inflację, obawy przed recesją, perturbacje na rynkach finansowych, przybierające na sile napięcia geopolityczne, wzrost stóp procentowych oraz problemy z łańcuchem dostaw. Globalne BIZ spadły wówczas o 12% do 1,3 bln USD (r/r). Polska zanotowała spadek napływających BIZ o 6% w 2022 r., jednak w dużej mierze był to efekt wysokiej bazy odniesienia z 2021 r. (Chrostowski, 2023).

Firmy z kapitałem zagranicznym osiągnęły w 2021 r. bardzo dobre wyniki finansowe, a zatem znaczenie reinwestowanych zysków w 2022 r. było większe niż transferu nowego kapitału z zagranicy. W efekcie przepływy pochodziły z państw o największym zaangażowaniu kapitałowym w Polsce, takich jak Hiszpania i Niemcy (Business Insider, 2022).

Wybuch pandemii COVID-19 przyczynił się do zmian w obszarze globalizacji społecznej. Po ogłoszeniu pandemii w 2020 r. wyjazdy turystyczne zostały wstrzymane na całym świecie lub odbywały się w minimalnym zakresie (Staszewska, 2022, s. 108). Na rys. 15 przedstawiono spadek liczby turystów w Polsce w okresie pandemii.


Rys. 15. Podróże nierezydentów do Polski w latach 2018–2022
Źródło: opracowanie własne na podstawie (World Bank Open Data, 2022).

Liczba turystów odwiedzających Polskę w pierwszych dwóch latach pandemii spadła o ok. 40% w porównaniu z 2018 i 2019 r. Pomimo wybuchu wojny w Ukrainie w 2022 r. ruch turystyczny w Polsce uległ poprawie i liczba podróży nierezydentów do Polski wzrosła, jednak była ona niższa niż w okresie poprzedzającym wybuch pandemii.

Należy również wskazać, że od 2019 r. widoczny jest spadek salda migracji, który zaprezentowano na rys. 16.

Pandemia wpłynęła negatywnie na migracje na całym świecie – znacznie ograniczono wówczas transport lądowy i powietrzny, a także morski. Ponadto wprowadzone restrykcje dla imigrantów wiązały się z utratą pracy lub znacznym zmniejszeniem zarobków (Brzozowski i in., 2020, s. 87). Wyniki badania „Pracownik zagraniczny w dobie pandemii", przeprowadzonego przez firmę EWL wskazały, że aż 39% imigrantów musiało znaleźć nową pracę w związku z pandemią (EWL, 2020).
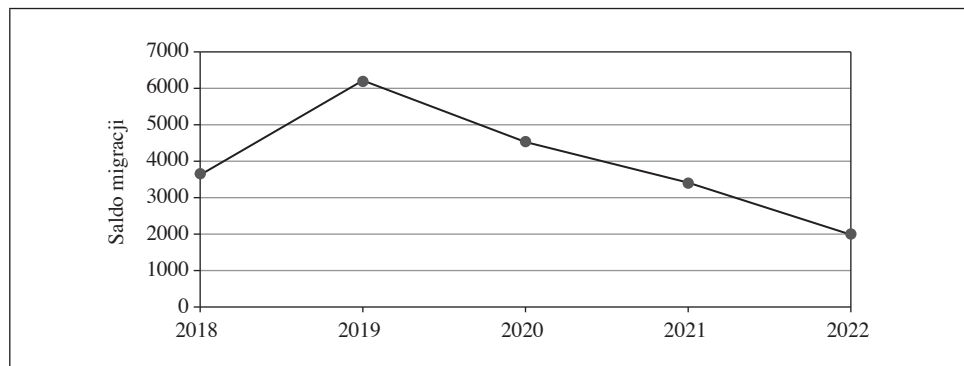
Rys. 16. Saldo migracji zagranicznych na pobyt stały w Polsce w latach 2018–2022
Źródło: opracowanie własne na podstawie (Bank Danych Lokalnych, 2022).

Wybuch wojny w Ukrainie spowodował napływ migrantów z Ukrainy do Polski. W szczycie, który przypadł na lato 2022 r., w Polsce przebywało ok. 1,4 mln uchodźców z Ukrainy, natomiast pod koniec 2022 r. liczba ta spadła do 950 tys. osób. Większość obywateli Ukrainy przebywa w Polsce, korzystając z ochrony czasowej, zatem nie zostali oni uwzględnieni podczas obliczania salda migracji na pobyt stały. Niemal wszyscy migranci to ludzie młodzi, w wieku produkcyjnym bądź przedprodukcyjnym. Demografia Polski uległa zmianie – pracujący wcześniej młodzi Ukraińcy wrócili do swojego kraju, a do Polski emigrowały kobiety z dziećmi. W 2022 r. kobiety i dzieci stanowiły ok. 87% obywateli Ukrainy przebywających w Polsce, z czego dzieci i młodzież ok. 43% (Urząd do Spraw Cudzoziemców, 2023).

Pomimo trwającej pandemii liczba zagranicznych studentów w Polsce w 2020 oraz 2021 r. rosła (zob. rys. 17). W 2022 r. wojna w Ukrainie spowodowała natomiast największy w historii wzrost liczby zagranicznych studentów Polsce.

W 2022 r. w Polsce studiowało ponad 105 tys. obcokrajowców, z czego najliczniejszą grupę stanowiły osoby z Ukrainy (45,6%) i Białorusi (11,4%) (GUS, 2023). Wojna w Ukrainie wpłynęła również na liczbę uczniów z Ukrainy w szkołach podstawowych i ponadpodstawowych – przed wybuchem wojny do polskich szkół uczęszczały ok. 102 tys. uczniów ukraińskich, a w 2022 r. liczba ta wzrosła do 192 tys. B. Olszewska-Łabędź (2022, s. 126–127) wskazuje, że istotną kwestią jest wprowadzanie do szkół asystentów międzykulturowych, pomagających uczniom i nauczycielom w porozumiewaniu się, a także umożliwiających dzieciom szybsze przyswajanie omawianych w klasie treści. Pobyt obywateli Ukrainy w Polsce w dłuższym okresie może się przyczynić do zwiększenia różnorodności kulturowej.
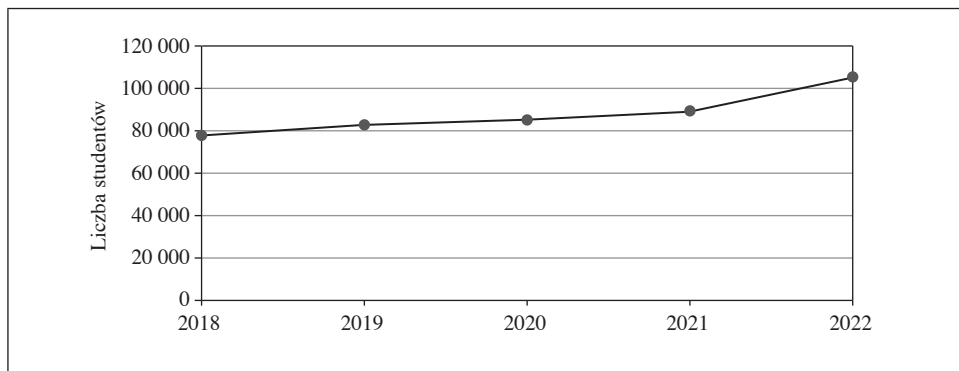
Rys. 17. Liczba studentów zagranicznych w Polsce w latach 2018–2022

Źródło: opracowanie własne na podstawie (GUS, 2023).

Niekorzystną tendencją w obszarze globalizacji społecznej jest dalszy spadek Polski w rankingu swobód obywatelskich (zob. rys. 18). W związku z wybuchem pandemii liczne ograniczenia praw człowieka i praw obywatelskich były wprowadzane przez dekrety, z pominięciem zasad legalizmu (Ślęzak, 2021).
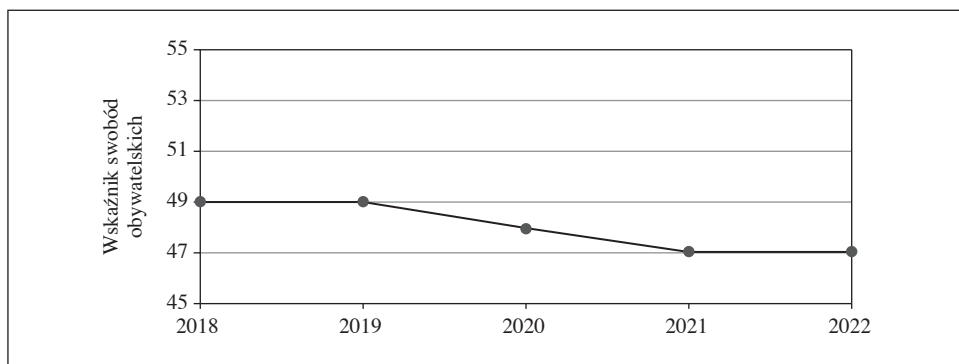
Rys. 18. Wskaźnik swobód obywatelskich w Polsce w latach 2018–2022

Źródło: opracowanie własne na podstawie (Our World in Data, 2022).

W 2021 i 2022 r. miał również miejsce dalszy spadek Polski w rankingu wolności mediów. Polska w rankingu z 2022 r. znalazła się na 66. miejscu, co stanowi spadek o cztery miejsca w porównaniu z 2020 r. (Reporters without Borders, 2022).

W odpowiedzi na inwazję Rosji na Ukrainę większość krajów należących do OECD ogłosiła wprowadzenie sankcji wobec Rosji. Nałożone restrykcje były związane z transakcjami finansowymi, zamrożeniem aktywów banków rosyjskich oraz

osób prywatnych, zakazem eksportu zaawansowanych technologii do Rosji, a także zamknięciem przestrzeni powietrznej dla samolotów lecących do Rosji (Funakoshi, Lawson i Deka, 2022). Zjednoczenie wielu krajów na świecie w obliczu wojny w Ukrainie może wpłynąć pozytywnie na procesy globalizacji politycznej.

5. Zakończenie

Od początku XXI w. widoczny jest rozwój procesów globalizacyjnych zachodzących w Polsce. W latach 2000–2020 Polska była najbardziej umiędzynarodowiona w obszarze politycznym, następnie w obszarze społecznym, a najmniej w obszarze ekonomicznym. Zarówno wybuch pandemii COVID-19 w 2020 r., jak i agresja Rosji na Ukrainę w znacznym stopniu wpłynęły na polską gospodarkę i zachodzące w niej procesy globalizacyjne. Od 2020 r. widoczny jest spadek w polskim bilansie handlu zagranicznego. W związku z inwazją Rosji na Ukrainę wiele krajów, w tym Polska, stanęło przed koniecznością dywersyfikacji partnerów handlowych, co pozytywnie wpłynie na procesy globalizacji ekonomicznej. W okresie 2021–2022 znacząco wzrosła wartość BIZ oraz inwestycji portfelowych w Polsce, co również będzie miało pozytywny wpływ na ekonomiczny aspekt globalizacji. Z kolei w obszarze globalizacji społecznej w latach 2020–2022 można było zaobserwować negatywne tendencje, takie jak znaczny spadek liczby turystów odwiedzających Polskę, ograniczenie swobód obywatelskich w okresie pandemii, dalszy spadek Polski w rankingu wolności mediów oraz spadek salda migracji zagranicznych na pobyt stały. Dla indeksu globalizacji społecznej w kolejnych latach istotny będzie czas pobytu w Polsce uchodźców z Ukrainy. Obecnie większość z nich korzysta z ochrony czasowej, jednak długość konfliktu w Ukrainie zdecyduje o tym, czy obywatele Ukrainy zamieszkają w Polsce na stałe. W obliczu agresji Rosji na Ukrainę wiele państw wprowadziło sankcje wobec Rosji, co przyczyniło się do umocnienia współpracy międzynarodowej, która może wpłynąć pozytywnie na procesy globalizacji politycznej. Kierunek zmian procesów globalizacyjnych w Polsce będzie zależał od długości trwania konfliktu ukraińsko-rosyjskiego, konieczne jest zatem podjęcie dalszych badań w tym zakresie.

Konflikt interesu

Autorka deklaruje brak konfliktu interesów.

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