
Good Regulation in the Telecommunications and Postal Services Markets as a Necessary Tool in the Aspect of Sustainable Development and Society 5.0

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Abstract:

Purpose: The aim of this research is to present the concept of regulation, defining the idea of sustainable development in terms of Society 5.0, developing recommendations for good regulation in the postal and telecommunications markets with social solutions.

Design/Methodology/Approach: Critical analysis of scientific literature, graphic visualization, and the CAWI method have been used to support the research questions.

Findings: The findings helped to formulate recommendations for the postal and telecommunications services and social solutions.

Practical Implications: The obtained results can be used to formulate a model of good regulation regarding postal and telecommunications services and social solutions.

Originality/value: The issues in such a context as the one presented in this article have not been studied in Polish and foreign literature.

Keywords: Good regulation, sustainable development, Society 5.0, postal market, telecommunications market.

JEL classification: F68, G18, L87, L 96.

Paper Type: Research article.

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1. Introduction

While the communications market (telecommunications and postal services), the Internet and digital technologies are changing the world, barriers that persist in the digital market continue obstructing the access to all goods and services for citizens. Moreover, telecommunications and postal companies have limited development opportunities, whereas businesses and governments cannot make full use of digital tools. It is therefore essential that such an important area of the economy expands in line with the policies of the state sustainable development while contributing to the development of actors and services in the postal and telecommunications markets. Such a development can be promoted by relevant social and economic policy tools.

As regards the state interest in shaping liberalized telecommunications and postal services markets, the most appropriate tool is a regulatory system. Such a system offers a market mechanism designed "to influence the industry development" (Weber, 2002) and society and economy in the context of sustainable development.

2. The Essence of Society 5.0 in the Concept of Sustainable Development Society 5.0

Sustainable development requires a socio-economic system capable of ensuring the support for the following goals, increase in real income, enhanced level of education, improved public health and quality of life in general (Pearce *et al.*, 1989). According to another definition, sustainable development is a process of economic transformation which optimizes current economic and social benefits without compromising the possibility of attaining the same benefits in the future (Goodland *et al.*, 1987).

Technical and technological development, digitalization of telecommunications and postal sectors, and the development of society 5.0 fit into the concept of sustainable development. Considering its complex, multi-faceted and interdisciplinary character, the concept has been applied in a number of industries. The concept of sustainable development has been attracting interest in many different areas, and because of its interdisciplinary character, it necessitates to combine several different scientific disciplines to promote research and implementation.

Some major changes that we have experienced recently are linked to the development of Industry 4.0 and the associated social, cultural and anthropological changes. The latter mainly linked to relations between human and technology. The fourth industrial revolution is based on the development of fully automated and intelligent production capable of autonomous communication with the main players on the market (Piccarozzi *et al.*, 2018) Thus, the concept of "Society 5.0" has emerged as a reaction to "Industry 4.0", for the latter mainly focuses on technical (information) and possibly economic issues, whereas social and cultural factors are not considered (Budziewicz-Guźlecka *et al.*, 2017; 2020). The concept of Society 5.0 is linked to the fifth social

revolution since the first hunting and agricultural societies transformed into industrial and information ones to reach the level of a super smart society, or Society 5.0.

In Japan, Society 5.0 is defined as a human-centric society (Ferreira *et al.*, 2018). While benefiting from economic advancement, it addresses social challenges through a dedicated system and technology (Gladden, 2019) that strongly integrate cyberspace and physical space.

It is a more integrated environment that that facilitates the merger of digital and real worlds. It can also be called a super-smart society or a Gigabit Society (Budziewicz-Guźlecka, 2019). The society of the future will continuously develop new values and services making people's lives more convenient, while ensuring sustainable growth.

3. Regulation of Infrastructure Markets

For the seamless development of the concept of sustainable development, it is necessary to regulate infrastructure markets due to their significant impact on the development. As specialist literature shows, the term regulation is used in many areas of different scientific disciplines. Representatives of economic, technological, social and other sciences have failed to agree on a single definition of the term. According to T. Prosser (2010) although difficult to define, regulation involves the intervention of the public authority and affects market operations (Gengatharen, 2001) through control (Misiuk, 2017) and supervision. Regulation is also described as a form of controlling behavior aimed at imposing a permanent control over an activity which is important for the society (Cornock, 2008). Regulation may also be understood as a direct control which defines specific do's and don'ts on economic actors (Acocella, 2002).

In a broader sense, regulation in the telecommunications and postal markets includes any public intervention into the economy that modifies the influence of the market and competition on participants of the economic process (Borkowska, 2009). Public interventions can stimulate or inhibit certain behaviors. In economics, regulation is understood as a state intervention, especially in sectors particularly important for the economy, such as telecommunications and postal services. The goal of the intervention is to eliminate or at least reduce market failure. The economics is particularly interested in public goods and market failures which may justify public intervention into the market system. Such an intervention can take place through regulation. Stigler (1971) points out that regulation is the "right of the state to apply coercive powers" (Vedung, 2017) intended to promote the development the concept of sustainable development. It should be emphasized that the regulatory regime for the telecommunications and postal markets comprises self-regulation and administrative regulation.

Although self-regulation and administrative regulation are treated as opposite concepts, Wojtyna (1990) questions the sense of juxtaposing them and claims that the

comparison is artificial. According to Goryni (1995), self-regulation is a special instance of state regulation, which in turn is a meta-regulation. The state is capable to restrain itself deliberately while imposing a solution. Self-regulation involves delegation of appropriate regulatory powers to market players (their alliances). Based on these powers, they organize the operation of the telecommunications and postal markets and the activity of market players. It has been often stressed that the role of the government is primarily limited to authorize telecommunications and postal operators to self-regulate their activity while using appropriate legal tools. Administrative or mandatory regulation should be considered as a last resort (Markham, 1997), or a certain safety measure applied where self-regulation fails. It is also a guarantee of market stability.

Stigler's theory (1971) of economic regulation provides a critical analysis showing consequences of government regulation in different areas of economic and social life. Stigler has questioned the prevailing opinion that the only aim of government regulation is to protect consumers, and he argued that the protection of producers is what often motivates the government. Regulation ceased to be understood as something imposed on organizations and started to be understood as a service often desired by those who are regulated (Cheng, 2015). The authors agree with Stigler that where the supply of regulation is created by officials having political powers and organizations give their broad support to politicians, it may happen that "the regulators become prisoners of the regulated" (Lipowski, 2002). The consequence of the above is that public interest and development (the concept of sustainable development) is pushed aside.

In the model approach, the regulator of telecommunications and postal markets should recognize public interest of the society or the economy. However, it is possible that public good may be marginalized by the different configurations of the political, institutional and legal systems.

4. Good Regulation

With regard to regulation, some authors (McGarvie, 2012) introduced the category of good regulation. Good regulation needs to be properly designed, effectively implemented and enforced, to pursue sustainable development provided that it fulfills these conditions, it gives the maximum net benefit to the society (Argy *et al.*, 2003). British authors (Baldwin *et al.*, 2012) believe that good regulation should be tested whether:

- proposed measures have appropriate legal grounds (adopted by relevant legislative body);
- there is a proper accountability scheme (control by democratic institutions, including public non-governmental institutions);
- planning, implementation and enforcement procedures are fair, acceptable and open;

- the regulator resorts to sufficient expertise; it is important to select experts, assess their motivation, create trust, secure conflict resolution procedures. Nevertheless, opinions of experts may turn to be insufficient and then political debate is needed);
- regulation is effective and based on analysis of resources and costs that ensure its rational operation.

According to the authors, tests should also answer the question, whether the regulation is pro-social. The alternative is to select those pieces of legislation that are effective from the economic point of view according to criteria set by independent institutions. There is also a possibility of a conflict between economic efficiency and social consequences and distribution (Kasiewicz, 2016). Social consequences are particularly important for the sustainable development. An example of the above is the market for telecommunications and postal services in Poland. In order to assess the "good regulation" category, the views of experts dealing with the telecommunications and postal markets in Poland should be analyzed.

5. Methodology

The analysis is based the CATI survey of telecommunications and postal market experts. Interviews focused on telecommunications and postal market experts who represented the following institutions, Office for Electronic Communications (UKE), the Polish regulator of the postal and telecommunications market, Research and Academic Computer Network (Nask), Institute of Telecommunications and leading research centers dealing with telecommunications.

The study involved 28 experts. The study was conducted in December 2020. 'Snowball' sampling was used to select experts for the study, i.e., experts invited had been appointing other experts dealing with regulation of the telecommunications and postal services markets to participate in the study until the target group was formed. The final evaluation was carried out by 28 experts. Evaluators included representatives of science and education, business, administration and non-governmental organizations. Individual assessments have allowed to determine an average score for good regulation.

The authors understand that responses may be subjective due to different experience of individual experts. However, it should be noted that in general expert knowledge of the surveyed should have a high degree of objectivity. Additionally, following Radaelli and Fritsch (2012), while assessing 'good regulation', not only objective but also subjective measures should be applied to reflect the perception of regulation by stakeholders, experts in particular. Thus, the authors express their doubt whether to rely on quantified assessments only. In his report Hepburn (2002) presents three types of measures for regulatory impact analysis (RIA):

- effectiveness – reflects how well the desired regulatory objectives have been achieved,
- efficiency – determines to what extent benefits of regulation are maximized and costs reduced,
- equity and fairness considerations – reflect the distribution of benefits and costs among groups surveyed.

The authors disagree with the third measure, since the application the equality principle, e.g., in the digital development of urban and rural areas, especially in countries of major disparities, can widen differences. Therefore, simplification is crucial for good regulation.

6. Survey Findings

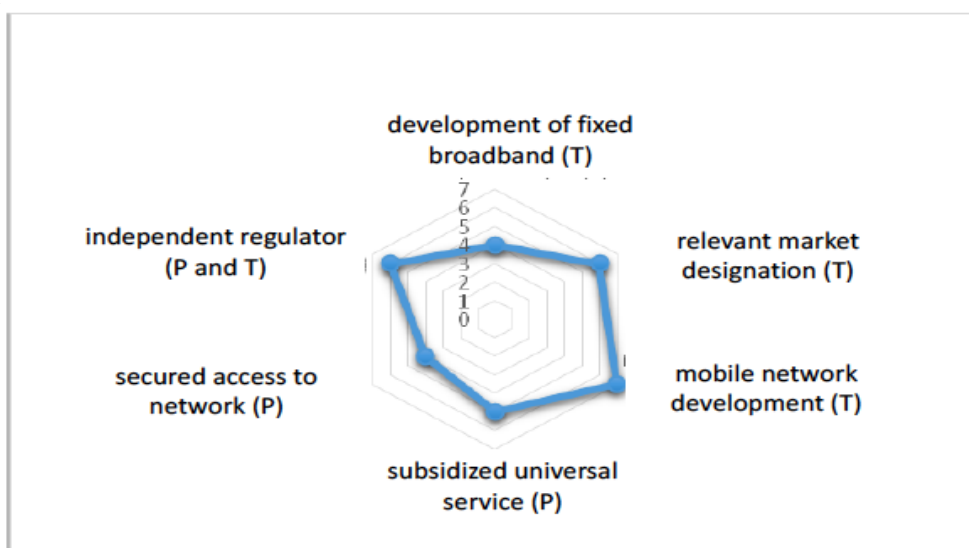
The study focused on good regulation on the Polish market, i.e., perception by experts of the following:

- effectiveness of regulation in the telecommunications and postal markets,
- efficiency of regulation in the telecommunications and postal markets,
- accessibility in the telecommunications and postal markets, and
- convergence of social issues.

Findings are presented in Figures 1, 2, 3 and 4, with breakdown by specific phenomena. An important element in the survey was the possibility of expressing direct comments on the phenomenon under consideration or expert opinions on related questions. The scale used by experts ranged from 1 to 7, where 1 was the lowest score and 7 the highest.

The first area assessed by experts, as shown in Figure 1, was the evaluation of the effectiveness of regulation in the Polish telecommunications and postal market. The effectiveness of regulation as regards the development of telecommunications infrastructure, in particular the range of fixed broadband, has been assessed as relatively poor - level 4. Experts added that their poor assessment is related to relatively late regulation of the market, which makes the Polish fixed broadband market less developed than the rest of the EU. On the other hand, they gave higher score (level 7) to the efficiency in regulating the development of the mobile broadband coverage. Experts expressed their positive opinion the designation of relevant telecommunications markets (level 6). As regards the postal market, experts expressed their positive opinion (level 5) about the effectiveness of regulation in subsidizing the provision of universal service. Regulation of access to the postal services network was assessed at an average level (level 4).

Figure 1. Effectiveness in achieving regulatory objectives for the development of the postal and telecommunications market in Poland



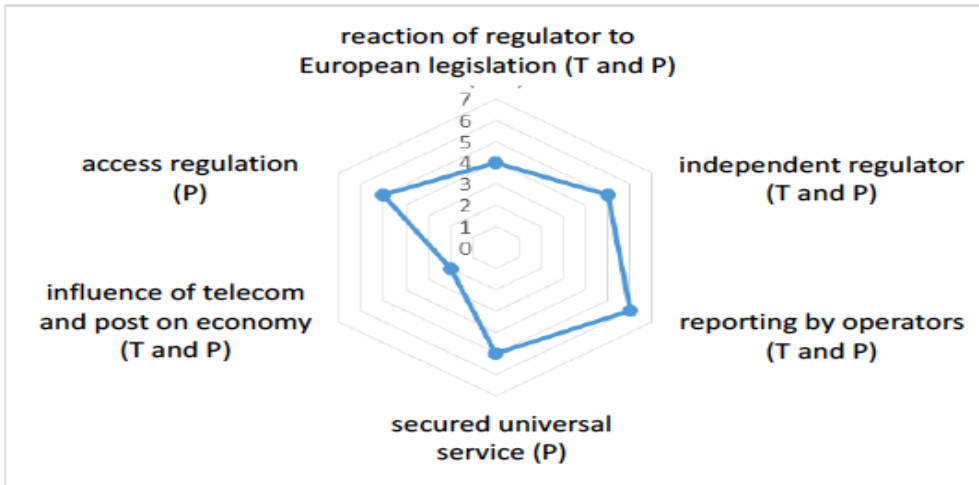
Source: Own study.

Another research area evaluated by experts, as shown in Figure 2, was the effectiveness of postal and telecommunications market regulation in Poland from the point of view of maximizing benefits. The first question solicited experts' opinions on the effectiveness of regulators' response to legislative changes in the European telecommunications and postal markets. The majority of experts assessed the effectiveness as low. It has been pointed out that the implementation of European regulations in the Polish market takes too long, which results in a reduced efficiency and thus delays in benefits.

Experts had a positive evaluation of reporting and indicated that in most cases the regulation was correct and effective. The independence of the regulator and its impact on efficiency was assessed as high. However, experts pointed out that though in theory the regulator was independent, there was a high risk that individual stakeholders may influence the regulator. In terms of the impact of the telecommunications and postal markets on economic development, experts indicated that it would have been better assessed if it had not been for delays in the determination of white spots (telecommunications market), or the sluggish liberalization of the postal market in Poland, which led to a low assessment by the majority of experts (level 2). The low assessment was also due to the fact that in the postal and telecommunications markets technological advancement does not match social development.

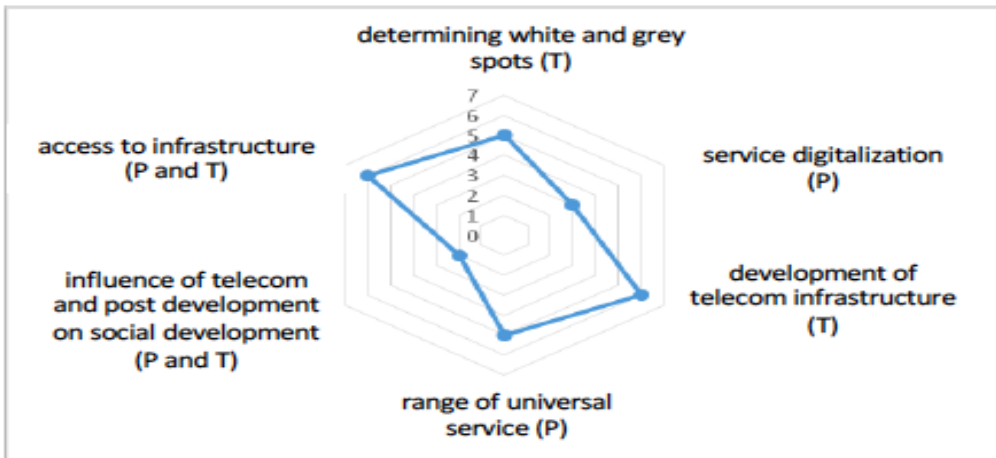
Yet another area surveyed included accessibility of postal and telecommunications services on the market, as shown in Figure 3.

Figure 2. Efficiency of regulation in the postal and telecommunications markets in Poland



Source: Own study.

Figure 3. Equity and fairness of regulation in postal and telecommunications markets in Poland

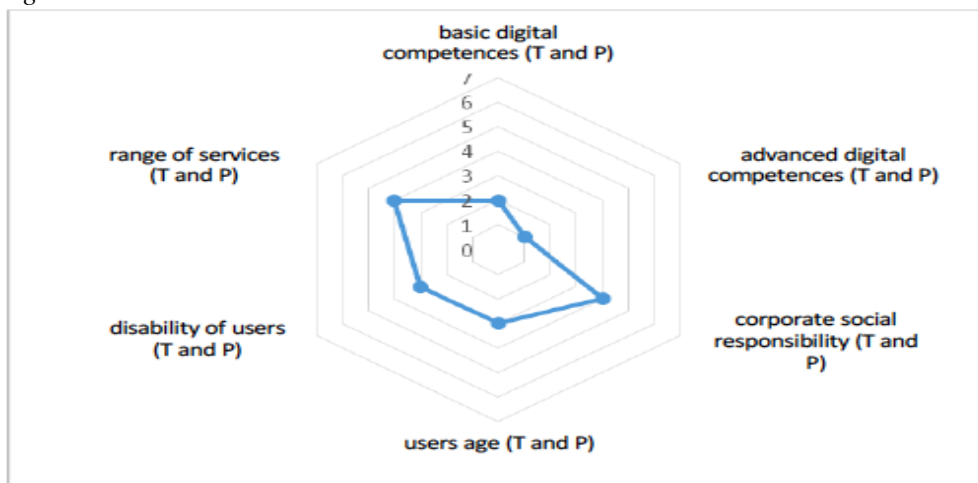


Source: Own study.

In the opinion of experts, equity and fairness in broadband development were moderate (level 6). They pointed out that although several years had passed, the focus on development of Eastern Poland (although correct) and long awaited investment in this area prevented intensive development in other areas. The designation of white spots was considered equal and fair and the majority of experts assessed it at level 5. Regulation of digitalization of services in the postal market was assessed as low (level 3), since the dominant operator focus on digitalization was not apparent. Access to the postal and telecommunications infrastructure is conducive to competition and level

playing field. However, the operator is required to provide access to infrastructure available despite huge investment cost incurred, which is not entirely fair. Equity and fairness in relation to the impact on social development has been assessed as low (level 2). Another area analyzed was related to social aspects of postal and telecommunications markets regulation, as shown in Figure 4.

Figure 4. *Integration of social aspects of telecommunications and postal markets regulation in Poland*



Source: Own study.

Opinions about taking into consideration age of citizens in regulations varied and set the assessment at level 2. This is due to the fact that improvements for elderly people are more often spoken about rather than implemented in practice. It has been pointed out that disability issues should be more often taken into account as well. The scope of services has also been evaluated at a medium level. Experts expressed their opinion that aspects related to the acquisition of basic digital competences should be reflected to promote a balanced socio-economic development.

They also considered advanced digital competences as a factor determining the future social and economic development. The corporate social responsibility (CSR) was at level 4. However, they emphasized that operators often brag about the CSR, but they do it mainly to attract attention and because it is "fashionable". Based on the survey, the authors propose that apart from its efficiency, effectiveness and fairness, good regulation should also comprise a measure pertaining to social issues, i.e., social compatibility.

7. Discussion

The goal of the article was to list features of good regulation in the telecommunications and postal markets that can foster the concept sustainable

development Findings discussed above are based on scientific research. This has resulted in recommendations for the concept sustainable development in the context of good regulation. The recommendations can be divided into the following areas:

- postal services,
- telecommunications,
- social solutions.

While analyzing good regulation in the area of postal services, it should be noted that traditional postings is the key activity of postal operators. However, as a result of the digitalization of the economy, it has faced greatest risk of a decline in the volume of postings, especially in highly developed countries. The trend is directly linked to the e-substitution of traditional postal services. On the one hand, it is the most vulnerable area and, on the other, it is characterized by powerful opportunities in the context of social solutions. Such opportunities can be utilized, provided existing services are replaced by modern technologies while maintaining the previous role of postal operators. Information technologies and the digitization of the economy have forced postal operators to implement new services, e.g. hybrid mail. It is important that e-services proposed are correlated with the increase in efficiency and capacity in the technology market.

Therefore, good regulation in the postal market should promote e-government services. These services can be used by national governments to communicate and exchange documents with citizens. They expedite communication with authorities and are welcomed by citizens. Additionally, they allow to store official correspondence on a dedicated platform. Postal operators are often seen as trusted institutions. The network of post offices is yet another advantage. Since postal operators (especially designated ones) have developed a large nation-wide infrastructure, they may become a partner for the provision of e-government services. Then, the use of modern information technology will strengthen the development of the information society in the concept sustainable development. Postal platforms offering electronic mail services can foster communication between administration and citizens.

The solution facilitates the citizen-government communication and reduces costs of providing e-government services. Moreover, such services can support the development of the public sector and provision of more quality services despite limited resources. It should be stressed that today, when more and more correspondence is exchanged in the virtual space, a modern state should adapt its potential to the trend and provide citizens with efficient digital services. Modern technologies guarantee a high level of security to communication between the state and the citizen.

However, individuals who lack competences or the possibility to receive digital correspondence from public authorities can be exempted from this form of communication and use the traditional postal service. To be able to provide such

services, the government should use economic policy tools to promote major investment in modern technologies and infrastructure (Drab-Kurowska, 2019).

In this framework, EU countries can develop Society 5.0 by broadening of the access to services. Postal operators can strengthen their position in the postal market by offering e-services. In the context of good regulation, it should be stressed that a key regulatory tool should focus on the provision of the universal service. The role of the state is to secure the universal service by using the broadband Internet. Universal services are commercially provided by telecommunications companies. For this reason, it is necessary that the regulator monitors the market and limits the provision of universal services that which could result in digital exclusion.

It is proposed to designate a separate tool to support the extension and upgrading of broadband infrastructure funded from of a broadband loan. This financial tool will fill the gap in the existing business support system. It will also offer a suitable support that matches specific needs of telecommunications companies and, above all, their investment projects.

While discussing good regulation in the context of social solutions, it should be stressed that good regulation needs to support digital education and awareness regarding security. This will play a fundamental role in enhancing public trust to new technologies. Diagnosis and continuous monitoring of digital competences are crucial factors. Yet another factor is increased investment in modern teaching tools that can be used at all levels of education, with particular emphasis on the education of children and young people. It is important to educate young people and promote informed use of technology. We should also provide training on basic digital competences for elderly people and other social groups at risk of digital exclusion. One possible solution is to establish digital technology centers, especially in neglected areas and areas lagging behind to increase the availability of digital tools. It is also important to establish a fast track for the development of the broadband technology, as mentioned above. It is also important to increase R&D spending on the development of digital technologies (including IoT, Big Data, and AI) in postal and telecommunications markets.

8. Conclusion

Regulatory concepts assume that good regulation should serve to create competitiveness and sustainable development (Armstrong *et al.*, 2007). It should be mentioned that regulation of the postal and telecommunications markets is only relevant if market failures are evident or one or more of conditions need to be created for the efficient operation (Supernat, 2007). In general, market failure is related to the functioning of public goods (Rothbard, 2008), existence of specific externalities, operation of monopolies, and a Stigler-Zweig thesis.

It is based on the belief that when we leave the economy to the free market only it will cause chaos or that it will make people driven by the most primitive instincts, such as greed and the lack of compassion and solidarity. In the opinion of the authors, it does not support the development of. efficient development of the concept of sustainable development

Good regulation in the telecommunications and postal industries is about controlling and influencing telecommunications and postal markets to provide more modern and cheaper electronic communications services by strengthening and developing competition. *Good regulation* should also take into consideration social aspects.

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