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A Theoretical Model of the Development of Public Citizenship in a Sustainable Environment: Case of Lithuania

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Abstract: The paper presents a theoretical and empirical assessment of this social phenomenon. The achieved scientific solution-result (Main Finding) is presented a theoretical model of the develop-ment of public citizenship in a sustainable environment has been created for the case of Lithuania. First of all, the paper discusses the conceptual issues of the expression of modernisation of civil society, highlighting and justifying the interaction of social changes and sustainable environment in economic, social, political, environmental and cultural aspects, presenting the case of Lithuania (The Case of Lithuania). On the other hand, following the United Nations Sustainable Development Strategy document, the field of progress and resilience of Lithuanian society in modern society is discussed, identifying and analysing various criteria that have been empirically tested. The authors noted that the democratic cube model was used to create a theoretical model of the development of public citizenship in a harmonious environment, and the HDI (human development index model) was also integrated. The model created by the authors systematically explains the analysis of the relationship between the expression of modernisation changes identified in the research and the formation of civil society; secondly, it substantiates the process of interaction between modernisation changes and public citizenship, discussing four fields of expression. Practical applicability of the model: it will help researchers to conceptually analyse and empirically study public citizenship; will help public policymakers and implementers to manage effectively, ensuring quality changes in society and managing new challenges, and it will also contribute to the conceptual formation of the country's long-term development strategy.

Keywords: model; sustainable; development; public; citizenship

1. Introduction

The modern world faces a double challenge: environmental degradation and social inequality [1]. To solve the problem of environmental degradation, in 2015, the United Nations (UN) approved 17 sustainable development goals, divided into 169 tasks and grouped into three areas: social, economic and environmental. When defining sustainable development, a sustainable environment, scientists emphasize the active participation of the community [2]. Masser distinguishes the principles of sustainable development: partnership and accountability; active participation and transparency; systemic approach; connection with the future; equality and justice; ecological constraints; the relationship between local and global scale; local importance [3]. It also distinguished active participation as a principle.

One of the first cases where ordinary citizens participated in solving a constitutional issue was initiated in 2004 in the Citizens' Assembly of British Columbia [4]. Since then, the idea of including direct input from ordinary citizens on questions of voting rules, constituencies, and other constitutional-level issues has spread to the state of Ontario with its citizens' assembly [5], California [6], and Iceland, which has a participatory and participatory constitution-making process [7]. Citizen participation has increased in different areas.

In Lithuania, the Civil Society Institute monitors the civic power index annually. This index includes four dimensions: civic activity, potential civic activity, perception of civic influence, and risk

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assessment of civic activity. However, there are questions about what indicators should be included to reveal the changes that can occur in one year.

Analyzing social and political transformations in post-communist countries, Dahrendorf drew attention to the fact that the clock of civil society runs the slowest: laws can be created and adopted the fastest, the implementation of economic and political reforms takes longer, and civil society needs development in even longer time because it requires profound changes in the culture of community [8].

The purpose of the article is to create a theoretical model of the development of public citizenship in a sustainable environment after the analysis influence of the expression of modernisation (social, economic and political) on the formation of civil society.

To achieve the goal, the following tasks are set:

- Through an interdisciplinary study to investigate the variables that evaluate the citizenship of the society, to perform an analysis of social, economic, and environmental aspects;
- Perform an analysis of the relations between the expression of the identified modernisation changes and the formation of the civil society, and create a theoretical model of the face of the society's citizenship, distinguishing the factors promoting and limiting the citizenship of the community.

In the next chapter, a review of the scientific literature is carried out on the modernisation of the country and its impact on citizenship in several sections: social, economic, environmental and political criteria for societal progress and resilience. The third chapter presents a theoretical model for the expression of public citizenship in a sustainable environment. The last chapter discusses the obtained results, discussion, and conclusions.

2. Modernisation of the Country and its Impact on Citizenship

The European Union defines citizenship as the legal ties of people to the state. The citizen and the state have specific duties and rights towards each other. Active citizenship links the various identities of members and empowers them to participate in society's economic, social, cultural, civic, and political life [9]. In summary, it can be said that being an active citizen means directly contributing to changes in society. However, most community members are reluctant to join cooperative associations to defend or satisfy the public interest rather than the opposite. As Ferreira and Burelli state, the growth of civic awareness encourages residents to realize that voluntary work and solidarity are the first steps in the formation of volunteering traditions and the development of civil society [10]. The concept of Hegel's, civil society, describes a complex system of economic activity, legal institutions, and various associations [11]. The famous German philosopher said that civil society emerged during the development of the state. We must admit that the idea of citizenship formation among scientists in Lithuania has been studied for several years [12,13]. It has been observed that some political, civic, and cultural movements and civic initiatives gain momentum, while others quickly die down. The question arises of why the rise of 'Sąjūdis', his victory in the elections just two years later, became a source of political apathy, disappointment, and mistrust of government institutions. Based on the research, it can be said that as society modernizes, its attitude toward citizenship also changes. However, it is still unclear what factors in the modernisation of society and to what extent, direction, positively or negatively, determine the formation of civil society. A complex approach to the problem in terms of a sustainable environment (social, economic, and environmental) is missing.

2.1. Social Cross Section

Some of the researchers in their work describe a harmonious social environment by distinguishing community involvement [14–16]. The other part indicates the factors used to define the social environment: public transport, health and social protection (health and social protection infrastructure), education and science (general, professional and higher education systems, scientific research infrastructure), and public security infrastructure [17,18].

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The goals of sustainable development, according to the UN, for the social environment are as follows [19]:

- To ensure that everyone has the opportunity to use modern, affordable, reliable, sustainable energy;
- Promote peaceful and inclusive societies for sustainable development, provide opportunities for everyone to demand justice, and create compelling, accountable, and inclusive institutions at all levels;
- Eliminate all forms of poverty in all countries;
- Achieving that cities and settlements become inclusive, safe, resilient, and sustainable;
- Ensuring inclusive and equal quality education and promoting lifelong learning;
- Ensure a healthy lifestyle and promote the well-being of all age groups;
- Achieving gender equality and empowerment of women and girls;
- Eliminate hunger, ensure food security and better nutrition, and promote sustainable agriculture.

According to data from the Lithuanian Statistics Department, 24.5 % of the popu-lation in Lithuania lives at risk of poverty or social exclusion. Between the city and the countryside, it is an 8% difference, that is, in the village, - 25.4 %, in the city - 17.4 %. One of the goals of sustainable development is to eliminate all forms of poverty in all countries, eliminate hunger, ensure food security and better nutrition, and promote sustainable agriculture. The relationship between the natural environment and poverty is a crucial topic in the literature on sustainability and development [20], which is receiving increasing attention among scholars [21–23]. Research is presented in different sections, that is, poverty alleviation through entrepreneurship promotion [24] and local investments [25]. Zhang et al. studied urban-rural migration and found that social protection has a significant positive effect on rural-urban migration while improving fairness, happiness, and a sense of security, promoting rural integration and identity, and promoting urbanization. Therefore, social attitude plays a vital role as a mediator [26].

In the country, most diseases occur due to diseases of the circulatory system (820.3), malignant tumors (275.9), and diseases of the respiratory system (37.9). Average expected life expectancy, a probabilistic indicator of population mortality, is widely used not only to assess the health of the population but also the overall level of public well-being [27]. Theorists of mortality and social development consider mortality and the structure of causes of death in general as one of the most important indicators of social development, and sudden changes in the number and structure of the population are often associated with changes in mortality [28].

Education in the context of sustainable development is a component of social capital [29]. This refers not only to the state's education system, but also to the integration of the fundamentals of sustainable development into learning (UNESCO), which aims to change the population's behaviour. Global education is an active learning process based on solidarity, equality, inclusion, and cooperation. It aims to provide knowledge on sustainable development, to help understand the challenges and causes of the world, to understand the impact of local actions on global processes, and to enable people to achieve international sustainable development goals [29]. Melnikas distinguished the creation of a new type of society, perceived as a knowledge society, which reflects the transformation of society itself into a qualitatively unique state [30]. In Lithuania, up to 60.3% of the population aged 30-34 years has obtained higher education.

In Lithuanian state institutions, women work less than men, i.e. in the Seimas - 28.4%, in municipal services - 31%, mayors - 6.7%.

28.1% share of energy from renewable resources compared to total final energy consumption.

The percentage of 99% of the population has access to the public municipal waste management service.

2.6 registered murder victims per 100,000 inhabitants. A secure environment is the only suitable environment where human rights and freedoms can be realized and developed. The feeling of security determines both the behavior and quality of life of individuals, as well as the social and

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political stability of the state and the trust of the population in the legal and institutional mechanisms [31].

The National Development Plan for 2021-2030 (from now on referred to as the Plan) is drawn up to determine the main changes that will affect the country in the coming decade, ensuring progress in the social, economic, environmental and security areas. Based on this plan, it is foreseen [32]: to increase social well-being and inclusion of the population, strengthen health, and improve the demographic situation of Lithuania; increase social and civic activity of society, participation in voluntary, community activities, mutual trust, social responsibility of society; strengthen civil society organizations, strengthen social dialogue; promote collective negotiations and the conclusion of collaborative agreements, strengthen trade unions; to strengthen the psychological and emotional resilience of society; increase the inclusion and effectiveness of education to meet the needs of the individual and community; to strengthen national and civic identity, to increase cultural penetration and the creativity of society.

Culture is a factor of national progress; without modern state development, society's ability to think critically and social cohesion is impossible. Therefore, the development of national culture is a priority of the state, including preserving the values of cultural heritage for the future society, nurturing and protecting its history, Lithuanian identity, and traditions. According to the authors of the collective monograph 'Development of Multiculturalism Competence in Lithuania: Experience, Problems, Perspectives' [33], research on multiculturalism has been expanding rapidly recently: various aspects related to this topic are examined, including the effectiveness of intercultural training, the application of the appropriate management style in different cultures, leadership in a multicultural environment, developing awareness, knowledge, and skills, intercultural communication, its effectiveness and models, formation of multi-cultural teams and the effectiveness of their activities, etc.

National identity is contextual and adaptable to the social environment of society and new needs. The lack of national identity as a collective commonality hinders the achievement of a greater concentration of community. The strategy 'Lithuania 2030' aims for 60% of society members to be very proud of their country's identity by 2030. More intensive measures are needed to achieve this goal because, according to 2017 data 74, only 40% of the country's population indicated that they are very proud of Lithuanian citizenship (in 2020, the target is an intermediate value of 50%) [34]. It is observed that those who participate in culture are more inclined to be proud of their Lithuanian citizenship and vote in elections than those who do not participate in culture. Taking into account the challenges and opportunities created by technological changes and globalization, it is essential to preserve the importance and active use of the Lithuanian language as a basis for national identity and values. Strengthen residents' pride in their country, shape and reinforce Lithuania's image in society, reveal and present the country's success stories.

The proposed/applied social environment indicators: the human social development index; global happiness index; sustainable society index (according to Sustainable Society Foundation, 2018); globalization index (according to KOW SWISS Economic Institute, 2018); income distribution (according to Eurostat, 2018); rankings of higher education institutions (according to Shanghai Ranking Consultancy, 2018); a public indicator of lifelong learning (according to Eurostat, 2018); index of political power (according to the Civil Society Institute, 2018); etc.; participation in cultural activities; average healthy life expectancy.

2.2. Economic Cross Section

The goals of sustainable development, according to the UN, for the economic environment are as follows [19]:

- Promote sustainable, inclusive and sustainable economic growth, productive employment, and decent work;
- Create resilient infrastructure, promote comprehensive industrialization, and encourage innovation;
- Reduce inequality between countries and within the countries themselves;

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- Ensure sustainable patterns of consumption and production.

According to data from the Lithuanian Statistics Department, the unemployment rate in Lithuania is 7.1%. There are more unemployed men (7.6%), while women are 6.6%.

Expenditure on research and experimental development is 1.12% of GDP.

44.3% share of processed municipal waste compared to generated municipal waste.

According to purchasing power standards, Lithuania's GDP has increased slightly, by 15% in the last three years. To achieve greater social solidarity in the country, it is necessary to increase the salaries of the officially employed, given the current economic and financial situation. In the current rapidly modernizing world economy, the growth of labour productivity and the development of well-paid jobs depend on the country's ability to create and use advanced (innovative) technologies in production. This determines the competition for product export with all countries of the world.

The national progress plan includes distinct directions for the intelligent economy: to move to a sustainable economic development based on scientific knowledge, advanced technologies, and innovation and to increase the country's international competitiveness; improve transport, energy and digital internal and external connectivity; ensure good environmental quality and sustainable use of natural resources, protect biological diversity, mitigate Lithuania's impact on climate change and increase resistance to its impact; develop the territory of Lithuania in a sustainable and balanced way and reduce regional segregation; strengthen national security [32]. The usefulness and great potential of understanding competitiveness, experimentation, and learning are related to different levels, from product, firm, and industry to group, city, or state, especially in large emerging economies [35]. Researchers have examined the relationship between competitiveness and innovation [36–40].

Infrastructure is essential for economic development and meeting the needs of countries, regions, and cities [41]. Roads, pipelines, airports, railways, power lines, gas pipelines, sewage/drainage systems, information technology and telecommunications infrastructure are usually considered physical infrastructure. Most researchers use physical expressions of infrastructure indicators in their research, i.e., evaluate the relationship between the length of roads, the size of pipelines, the number of telecommunications lines or the number of telephone subscribers and their impact on economic indicators. However, qualitative indicators are not less important because it is not enough to have only physical infrastructure elements to develop the economic-social system. Their quality (reliability, timely delivery, and ease of use) becomes an important characteristic. The issue of the development and security of energy networks is emphasized in the scientific literature. Energy networks are the city's electricity, heat, and gas supply systems. The dependence of energy networks on one market creates a real threat to the city's economic vulnerability and the decline of the city's economic power, the loss of companies' competitive advantages due to increased production costs. Researchers have shown that the growth of the length of the road per thousand inhabitants, exports per capital, education expenditure per employee, and physical capital stock contribute positively to economic growth [42]. Road infrastructure development positively affects economic growth [43–45]. The prominent identified role of road infrastructure is mobility, which ensures the movement of not only people but also goods and services. And it also improves access to goods and services in specific markets. However, to achieve the goals of sustainable development, i.e. to ensure good environmental quality and the harmony of natural resource use in countries, sustainable transport goals are set. Sustainable transport aims to provide that environmental, social, and economic factors influence all decisions related to the transport system [46].

The country's economic security issues began to be examined relatively recently in the twentieth century. The concept of financial security was introduced by US President T. Roosevelt in 1934 who created the Federal Committee on Economic Security [47]. Objects of economic security can be the state, society, citizens, companies, institutions and organizations, territories, or individual objects. The main subject of economic security is the state, which performs its functions in the field of economic security with the help of legislative, executive and judicial authorities. The economic aspect of security is especially evident in the three listed groups of threats to Lithuania's national security:

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the eighth (economic and energy dependence, economic and economic vulnerability), the tenth (social and regional exclusion, poverty) and the eleventh (demographic crisis) [31].

New data and analysis from the report 'New threats to human security in the Anthropocene Demanding greater solidarity' show that people's sense of safety and security is low in almost all countries, including the wealthiest countries, despite years of successful development. Those who benefit from the highest levels of good health, well-being, and education report even more anxiety than ten years ago [48]. To address this gap between development and perceived security, the report calls for greater cross-border solidarity and a new approach to development that allows people to live without lack, fear, anxiety, and resentment. Strengthening national security is considered the highest goal of Lithuania's domestic and foreign policy, which is given priority, and based on the National Agreement 'On Lithuanian Defense Policy Guidelines', it is committed to consistently increasing the defence of the state of Lithuania, funds are allocated (2.5% of GDP allocated to defence in 2030). Strengthen cyber security and defence, and effectively manage cyber incidents. In implementing the task, it is planned to promote cooperation between the public and private sectors, implement R&D solutions, raise the cyber security culture of society (including companies), strengthen international collaboration - actively participating in the creation of EU cyber rapid response forces, and provide mutual assistance in the field of cyber security.

Proposed/applied economic environment indicators:

Index of integration into foreign markets (according to The Word Bank, 2018); business environment index (according to The Word Bank, 2018); Gross domestic product per capita for the purchasing power standard (according to Eurostat, 2018); business renewal (according to 'Versli Lietuva', 2018); according to the share of creation of new companies (according to Eurostat, 2018); business investments in academic research and experimental development (according to Eurostat, Eurostat, 2018); cooperation between universities and business (according to the World Economic Forum, 2019); cumulative innovation index (according to the European Commission, 2019); patenting index (according to World Economic Forum, 2019); global competitiveness index (according to World Economic Forum, 2019).

Proposed/applied state efficiency indicators (management field indicators):

Corruption perception indicators (Transparency International, 2018); state regulatory policy - the ability to form and implement appropriate policies (according to The Word Bank, 2018); E-government development index (according to United Nations, 2018); democracy index (according to The Economist Intelligence Unit, 2018).

2.3. Environmental Cross Section

The goals of sustainable development, according to the UN environmental protection, are as follows [19]:

- Ensure water availability, sustainable management, and sanitation for all;
- Take urgent action to combat climate change and its effects;
- To preserve and sustainably use oceans, seas, and marine resources for sustainable development;
- Protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, stop and reverse land degradation, and stop loss of biodiversity.

According to data from the Lithuanian Statistics Department, up to 94% of the population in Lithuania uses safe sanitation services. 5.3 tons of greenhouse gas emissions per 1 inhabitant. 18.2% share of protected marine areas. The area of newly planted forests is 882.5 ha. To achieve the UN goals, a national progress plan has been drawn in Lithuania, based on which it is foreseen [32]: to ensure good environmental quality and harmony in the use of natural resources, to protect biological diversity, mitigate the impact of Lithuania on climate change and increase resistance to its impact; reduce energy consumption in residential and public buildings and companies, increase energy efficiency of buildings, and install devices that produce energy from renewable sources; reduce

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vulnerability of natural ecosystems and the country's economic sectors, strengthen the ability to adapt and increase resistance to climate change; improve risk management and protection against natural phenomena, implement sustainable infrastructure solutions. Progress in a society can be achieved by following the new principles of 'man - society - nature' interaction, which is, establishing the principles of social justice, economic efficiency, and nature protection at the same time [49]:

1) technological conservation paradigm (the main ideas of this paradigm are also reflected in the dominant social paradigm, according to which man is above nature or next to it and unconditionally trusts science and technology, which can solve all social, economic and environmental problems [50]);

2) paradigm of ecological conservation (the use of new technologies and chemicals damages the existing natural environment, so human activity can be effective in the long term only if it adapts to ecological processes and does not exceed the capabilities of natural systems. The elasticity of natural systems is possible up to certain limits, but the closer society gets to nature, the more dependent it is on local natural systems, and the better it must understand those limits [51]);

3) Environmental protection paradigm (the content of this paradigm consists of the control and prevention of environmental impact, the assessment of environmental damage, the introduction of environmental taxes, the limitation of environmentally harmful economic activities of people, and the creation of protected areas; therefore, it is also called neutralizing, defensive [52]).

2.4. A Cross Section of the Political Environment

An essential condition to ensure the functioning and stability of democracy is the participation of citizens in the state management process [53]. Political science theorists emphasize the importance of various forms of political involvement for the process of democratic governance and point out that voting in national and local elections is only one of many possible forms of political participation. Pateman (1970) states that 'we learn to participate by participating' and encourages the development of organizational skills in schools and workplaces [54]. Various forms of expressing an opinion, such as: contacting politicians, government, or municipal officials and organizations, writing letters, participating in strikes, demonstrations, or protest actions, participating in an election campaign, donating money or supporting specific political forces, representing and signalling the political elite about the civic opinion and position on a particular issue.

According to data from the Political Participation Index [53], the activity or passivity of political participation can be partially described by demographic characteristics: more politically active persons are more educated, have higher incomes, have prestigious professions, and are more interested in politics.

However, some researchers try to identify additional factors that affect political activity, for example Rosenstone and Hansen emphasize communication with politicians or being in a political environment [55]. They argue that the participation of citizens is significant in the fierce competition between political parties. Other authors suggest that political activism can be based on or created by the community in which one lives [56]. And this is also influenced by the work environment, the church, and membership in voluntary associations and organizations [54], [57–59].

After the Second World War, new international institutions were created (United Nations, World Bank, International Monetary Fund, World Trade Organization, Organization for Economic Cooperation and Development, etc.), which coordinated various areas of world society and worked alongside national authorities. Influential regional organizations such as the European Union, the Association of Southeast Asian Nations, and many others are being established. A global network of nongovernmental organizations is also being developed, and transnational corporations are being created, often economically more powerful than nation states. At the same time, the methods and tools of most of the traditional functions and activities performed by the state are gradually changing, as most of the economic, social, political, and cultural processes must be analyzed in a global context. One of the positive consequences of the globalization process is that social policy becomes a global priority [60]. The successful participation of states in international processes also depends on national political, economic, social, and cultural conditions, the model of the administrative system, and administrative capacities. Thus, the main goal of public administration institutions is to find ways to

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professionally serve the public based on ethical and managerial, productivity and efficiency values, respecting the principle of equal opportunities, combining all this with the constantly changing political environment [61].

The following areas of activity require the greatest attention in the conditions of globalization of public administration [60,62]:

- Implementation and control of quality standards;
- Arbitration of conflicting forces;
- Franchise of management models;
- Balanced provision of services;
- Management of multicultural relations;
- Fostering cultural identity.

Taking into account the European Commission's annual evaluation of the overall digital activity of Europe and the progress of EU countries in the field of digital competitiveness, the digital activity indicators of each EU country are presented, which best reflect the state and development of the country's digital economy. Allows to evaluate the progress of EU member states according to 4 leading indicators: access to e-Commnication, human capital, digital integration, and digital public services. According to the report of the digital economy and society index of this report, as of 2021, Lithuania ranks 14th in 2022 (LT score - 52.7) among 27 EU member states (EU score - 52.3). The digital economy and society index significantly improves the industrial environment, positively impacting governments' economies and development plans.

Lithuania is among the leading countries that have created the most technologically advanced public e-services. These measures, which include developing new electronic services and improving existing ones, increase the efficiency of public sector operations and administration, and ensure more incredible progress in digitizing administrative and public services.

To find out how often people in our country use e-services provided by public sector institutions, it is first of all necessary to analyze statistical data related to the public's information literacy and opportunities to use information technologies since these data are essential and precisely they strongly influence the volume of use of e-services.

Lithuania's overall connectivity score is 49.4, so Lithuania ranks 23rd among EU countries. Due to the prevalence of the Internet connection and data transmission speed in Lithuania, there are no problems providing and receiving public services electronically.

The development of broadband internet and fibre (optical) communication lines has developed rapidly in the past year. In general, Lithuania's number of households with Internet access at home is growing.

Regarding the possibilities of using a computer and Internet access, this year in Lithuania, 80% of households had personal computers at home, and 88% of households had Internet access. This is a noticeable growth, since in 2020, there were 77% and 82% of such households, respectively.

This growth is essential because these indicators show what part has Internet access and what part of the population has IT literacy, which largely depends on the ability of individuals to use and order certain e-services provided by public sector institutions.

Although the whole country is rapidly converging with the EU, the differences between and within the regions of Lithuania remain clear. Compared to 2021 to 2022 in the corresponding quarter, GDP per capita in the country increased from 9.4% (growth of 46.9%), but the regions grew at different rates. Although the GDP gap between Vilnius and other counties has slightly decreased, Vilnius County stands out in terms of employment growth (44% of newly employed persons in 2020-2022 were explicitly in the Vilnius region), income (average disposable income per inhabitant increased from 118% of the national average in 2021 m.) and investments. These indicators reflect that residents of large cities have the most incredible opportunity to use a computer and access the Internet. At the same time, the digital divide is noticeable in towns and villages. Looking to the future, it is essential to ensure further development of broadband networks in rural areas to solve the connection problem so that an increasingly large part of Lithuanian territories can use affordable and high-quality mobile communication services.

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It is also important to examine people's use of Internet services by age group since it is likely that older people find it much more challenging to use the Internet than younger people due to various technical reasons, including a lack of IT literacy and knowledge.

Young and middle-aged people mostly use it, and their use of IT decreases as they age. In 2022, 88% of the population aged 16 to 74 years used the Internet (87% in 2021). 100% of the 16-24 year old population used the Internet and 57% of the 65-74 year old population used the Internet. Compared to the previous year, the share of elderly people (65-74 years old) using the Internet increased by two percentage points.

Lithuania ranks 13th in the EU in the digital technology integration business. In this area, Lithuania's results (LT score – 37.2) slightly exceed the EU average (EU score – 36.1). Technological development in the context of Lithuania can be considered e. a factor promoting the development of services for Lithuanian and foreign citizens and businesses.

Lithuania is quite advanced in the field of public digital services. In this field of services, Lithuania ranks 10th in the EU (LT score – 81.8). In 2021 Lithuania continued to improve digital public services and achieved results well above the EU average. However, improving the convenience and accessibility of e-services for the public and businesses would further improve digital public administration. Better integration and organization of e-Services would help people and companies find the services they need and enable public authorities to create new services and automate existing ones.

Based on 2022 data from the survey conducted by the Lithuanian Statistics Department, 47.2% of state and municipal institutions and bodies provide fourth-level electronic services via the Internet, i.e., i.e., the opportunity to fully participate in the processes through the website is provided, the handling, decision and other standard procedures of applications, cases are carried out through the website, and the applicant does not need to complete any other formal 'paper' procedures. And even 21.5% of institutions provide fifth-level electronic services on the Internet, i.e., available information is automatically provided.

Examining the statistical indicators that reflect the population's use of e-services provided by public sector institutions, we can see a growing trend: in 2022 61.5% of institutions offered services through the electronic government portal, 100% - via e-mail, 53.8% - provided information services via social networks, 11.8% - via Internet phone connection, and 8.7% - via mobile apps.

The growing trend of e-services contributes to increasing demand, reduces the administrative burden of companies and citizens, ensures faster, more convenient, and cheaper communication, and thus promotes sustainability and further economic and social benefits for the entire society.

According to the information society development committee, electronic services remain the most popular among residents: income tax declaration service, used by 46%, health-related benefits, by 45%, car registration service, by 20%, with personal documents (passports, identity cards, driver's licenses) related service, 20%, job search service, 17%, service related to birth and marriage certificates, 13% Services most valued by residents: income tax declaration, declaration of the place of residence, availability of public library catalogues, admission to higher education institutions, car registration, personal documents, and birth and marriage certificates.

Information Society Development Committee 2021 II Quarter, according to data from the conducted research, 56% of Lithuanian residents visited the websites of state institutions and bodies in the last 12 months; for comparison, in the 2020 II Quarter, 51%. Electronic public services provided by state institutions and bodies are mainly used on these websites (72% of visitors), information about a state institution or institution is searched for (52% of visitors), information about public services provided by state institutions and bodies and the procedure for obtaining them (34 % of visitors), searching for information about employees, their contacts (23% of visitors) and downloading applications, forms (21% of visitors to public sector websites). Most of the time, people do not visit the websites of public sector institutions and do not order e-services from them. 31% of respondents who have never seen public institutions websites in the last 12 months indicated that it is challenging to use e-services services. Some of the population stated that they could not find the necessary information (24%) as the reason for not visiting the websites of public institutions. However, most

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residents (81%) generally assess the quality of the information provided positively. This shows that either e-mails provided in public sector institutions service procedures are pretty complicated and not every person can use them, or people lack IT knowledge and skills to use them, overall assessment of e-services provided by public sector institutions. The information provided to the users of the services is becoming more and more apparent, specific, and of higher quality, which should undoubtedly encourage greater availability of e-services and their use in public sector institutions.

To achieve greater efficiency in the system of public sector institutions, public opinion on evaluating the work of state and municipal institutions is very important. Distrust in state institutions is usually viewed unfavourably due to damage to democracy and economic activity. Still, in the last five years, the population's trust in state and municipal institutions has increased from 51 to 65%.

3. Theoretical Model of the Development of Public Citizenship in a Sustainable Environment

As already discussed, public participation can be a powerful tool for achieving core democratic values such as legitimacy, justice, and effective governance. Carefully designed and not manipulated, participation can be an effective tool for achieving good governance. To create a theoretical model of the development of public citizenship development in a sustainable environment, the democratic cube model is used, based on which participation is expressed through three dimensions:

- Who is involved?
- How do they communicate and make decisions?
- What influence do they have on public decisions and actions?

In addition, HDI (human development index model) was integrated into the predictive model of public citizenship in a harmonious environment, which is a generalized measure of average achievements according to the main dimensions of human development: long and healthy life, knowledge and an adequate standard of living. The HDI is the geometric mean of the normalized indices for each of the three dimensions. The HDI can be used to question national policy choices, asking how two countries with the same GNP per capita can achieve different human development outcomes. These contrasts can lead to debates about government policy priorities. However, HDI simplifies and captures only part of what human development means. It does not reflect inequality, poverty, human security, empowerment, etc.

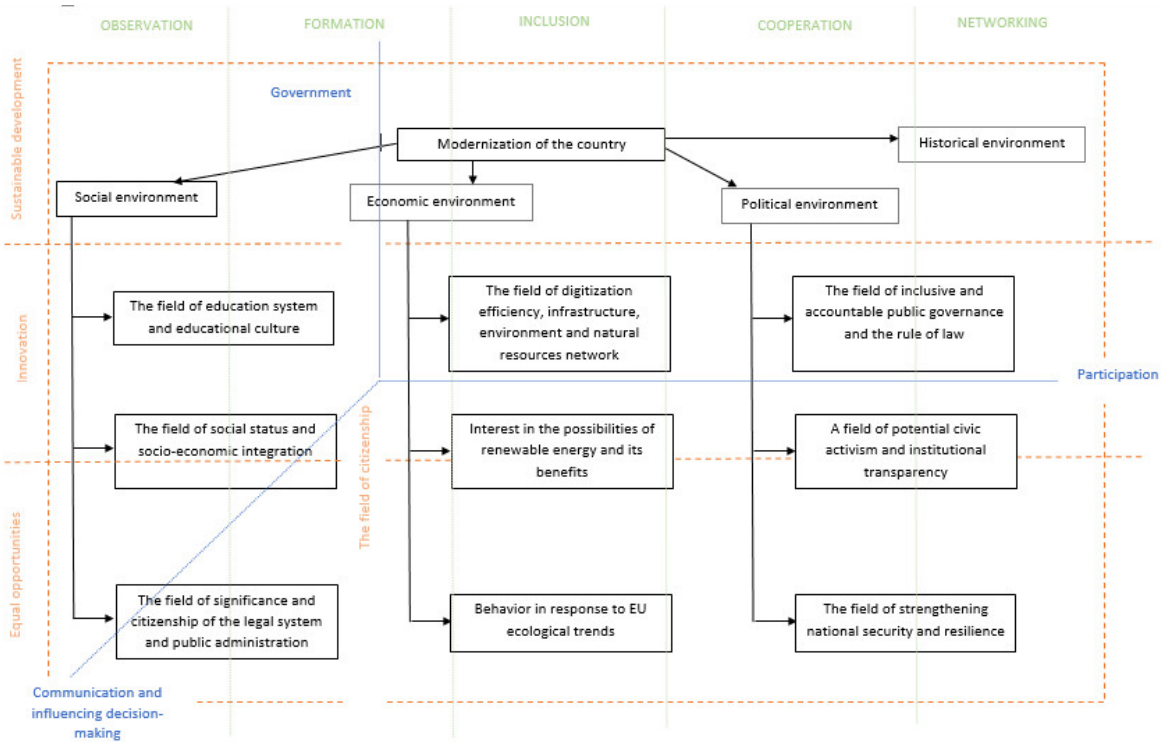

Figure 1. A theoretical model of the development of public citizenship in a sustainable environment.

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Summarizing the development of public citizenship in a sustainable environment theoretical model, it can be said that it was constructed by conceptualizing the scientific literature, the theoretical insights constructed by the researchers, and the empirical data of the conducted research (two waves).

First, the model systematically explains the analysis of the relationship between the expression of the modernisation changes identified by the study and the formation of civil society.

Secondly, it underpins the process of interaction between modernisation changes and public citizenship through four fields of expression.

Monitoring would ensure and enable the availability of information to the general public so that community members can provide feedback and contribute to change. This would help public policymakers implement changes based on citizens' evidence and ideas to generate decisions). The design of the model presents an integrated system of indicators, identifying the factors promoting and limiting the citizenship of the society; allows for conceptual analysis and empirical research on how to strengthen citizenship and purposeful management, ensuring quality changes in society, managing new challenges, and contributes to the conceptual formation of Lithuania's long-term development strategy and the application of new national development scenarios in the field of cyber security; at the state level, it helps ensure public safety and resilience.

4. Conclusions

Summarizing the analysis of secondary statistical data, which indicates and shows how the modernisation of society is determined by intelligent management, and the interaction between the public sector and citizens, it can be said that e-services are particularly important for the socio-economic development of the country, strengthening citizenship, developing the data economy and the common digital market, especially ensuring the safe and free movement of data, as it reduces costs and barriers to the smooth functioning of the single market.

The growing trend in the number of companies and society using e-services indi-cates that the importance of e-services will continue to grow and that public sector organizations will have an ever-increasing extent. When developing e-services, fundamental human rights, such as freedom of expression, privacy, and the right to personal data protection, must be respected, supported, and enhanced. Although Lithuania has made progress in many valued areas, some areas, such as human capital, access to communication, and use of Internet services, are still below the EU average - it is necessary to remove the reasons that are hindering the state's digital transformation processes, with the aim that as large a part of business and society as possible directly feel the benefits of digitization.

Indicators of the socioeconomic condition show that the socioeconomic differences between the country's regions and within the areas do not decrease in Lithuania. The main reason is the uneven territorial economic development. It is essential to improve the po-pulation's digital skills and invest in the retraining and up skilling of the workforce. Although the country has been accumulating experience in digital transformation initiatives for several decades, it is ineffective in overcoming the challenges of the state's information resources infrastructure, fragmented cyber security assurance, and the openness and efficient sharing of public sector data between different sectors of the economy. Public electronic services differ in maturity levels, and services are not adapted to foreign entities, persons with disabilities, or communication difficulties. Society's weak digital abilities limit the effective use of public and administrative services and reduce the opportunities to participate in the market successfully.

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