The impact of economic prosperity on the quality of housing with a focus on selected issues

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Abstract

The Slovak Republic's economic prosperity has created sufficient potential to improve the quality of housing in our conditions. The paper examines the Slovak Republic's economic prosperity in the period under review on selected aspects of housing quality. The paper used research questions that were used to investigate the observed phenomena. We examined the household's current state in terms of average living space and the number of people living there. We compared the findings with the countries of the European Union. In this paper, we focus on the issue of rising real estate prices and the consequences of financing real estate from foreign sources. Due to the current epidemiological situation, secondary research of a professional publication in the world and our country was used to solve the mentioned problem. In the final part, the author evaluated the research questions. The output of the paper is formulated answers to the results of selected research questions aimed at assessing the connection between the quality of life, quality of housing, and economic prosperity of the country.

Introduction

The issue of quality of life has become the center of attention of researchers from various scientific fields. Researchers seek to define and measure the quality of life-related only to the health of the individual and the conditions of quality of life from a political, economic, and social point of view, as well as the overall satisfaction of the individual with life. The increasing interest in issues related to the quality of life creates opportunities for new knowledge to measure or identify factors influencing decision-making in specific situations. Despite the high interest of the scientific community in quality of life, there is no generally accepted classification of factors and a common opinion on the factors influencing the quality of life and their interrelationships. At the theoretical level, there is still a lack of a methodologically based model for measuring the quality of life, identifying, and systematizing the factors determining the quality of life (Pukeliene & Starkauskiene, 2011). Due to the absence of a comprehensive measurement of quality of life and their identifiers, a barrier is created to a precise theoretical basis for defining theoretical directions of quality of life. Despite the lack of consensus of the scientific community on the theoretical basis of the issue of quality of life, the

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authors are characterized by similar features in creating the theoretical basis. According to the author Liba, the quality of life can be characterized as: "*a set of conditions (health, psychosocial, economic, environmental) that enable (ensure) health and satisfaction with life in a complex of factors and dimensions of human life*" (Liba, 2016). According to the author Murgaš, the quality of life consists of: "somatic, psychological, social and economic good, resulting in a subjective feeling of satisfaction or happiness confronted with health, socio-pathological, economic and environmental evils" (Murgaš, 2005). Therefore, we can say that quality of life is a broad-spectrum concept that includes general phenomena that affect the needs themselves. In general, we can characterize the quality of life based on an objective or subjective view (Cummins, 2005). An objective view can be characterized as the penetration of social, cultural, environmental satisfaction of needs. An objective view can be characterized as the penetration of social, cultural, environmental satisfaction of needs. Objective quality of life is generally quality of life measured using objective criteria, social and economic indicators without the use of personal experience and individual perception of the environment. The main subject of the study of objective quality of life is the external environment of quality of life and the environment's habitability. It is evaluated using social and economic indicators, their systems, and composite indices. The subjective view evaluates a person's overall impression of satisfaction with the quality of life itself. It is expressed by personal feelings for overall satisfaction with life (Pukeliene & Starkauskiene, 2011).

It was adopted in 2009 to address the issue of quality of life in the European Union "*Stiglitz - Sen - Fitoussi Report*" (Kanbur et al., 2018). There were accepted statistically measurable indicators of the quality of life. The issue of quality of life has been divided into nine statistically measurable areas, which is a common context assume the quality of life of the population in the Member States of the European Union (Eurostat, 2009.

1. The material living conditions evaluation indicator defines statistical data aimed at meeting the needs in terms of the individual's financial security or meeting the needs in terms of housing quality.
2. The Productivity indicator collects statistical data on employment in the country.
3. Health indicator collects statistical data regarding the satisfaction of the citizen with his health condition.
4. Statistical data from the field of education define satisfaction with the securement of quality education throughout a whole life.
5. Collection of statistical data to evaluate the aspect of leisure and social relations.
6. Statistical data analyzing the field of Physical and economic security of the citizen.
7. The Governance and Human Rights indicator focuses on collecting statistical data on citizens' trust in government institutions and justice.
8. The Natural and Living Conditions indicator assesses satisfaction with the state of the environment.
9. General life experience indicator, which assesses overall life satisfaction.

The approach to quality of life requires a comprehensive approach and cooperation between various social sciences. A more comprehensive understanding of consumers' housing needs is required. From the point of view of consumers' needs, service providers must understand what needs their consumers demand and expect. Service providers

must emphasize factors that affect housing needs that affect the very quality of life of the consumer. Authors like Almquist took over this idea and created the so-called Value pyramid. The value pyramid perceives man as a consumer. As a result, it creates the necessary causality in expressing a person's needs in the field of consumer behavior (Almquist et al., 2016). Housing and the household are generally known as environmental and social determinants of health, and the quality of housing is associated with mental, physical, and general health (Thomson, et al., 2013). Quality of life is an issue that affects billions of people in developing and developed countries in the 21st century. Although the economic field has many orientations, from physical to socio-cultural, psychological, and environmental, it is undoubtedly crucial to increase it. In the article, which will deal with the links between housing conditions and the country's economic prosperity, it is necessary to assess the concept of housing in the broadest sense, which includes not only physical but also socio-cultural, political, and economic requirements of human prosperity.

The concept of pillars of sustainable housing is used in modern approaches in the field of housing quality issues. The concept of the pillars of sustainable housing seeks to address the current problems with a lasting effect. We include the economic, social, and environmental aspects among the Pillars of Sustainable Housing (Purvis et al., 2019). From the economic point of view of sustainability, it is based on the assessment of the primary economic relationship profit - consumption, while from the point of view of theory, there are two basic assumptions for the economic sustainability of housing (Strange & Bayley, 2008). As a first assumption, we can include benefits for housing providers or investors. The second assumption focuses on production and consumption processes that do not create unwanted externalities. The environmental sustainability of housing is based on the effects of housing on the environment. At the same time, on the other hand, from the effects of the environment on housing. From the perspective of the Social Sustainability of Housing, the essential moment is to ensure a decent quality of life for every person (Dhahri & Omri, 2008).

The need for housing is one of the most fundamental human rights. Housing is one of the social rights and a basic human need, and its quality and availability are one of the evaluation indicators of the living standards of the population of a given state. The authors Bonnefoy and Krieger characterize the quality of housing as: "*the physical condition of a person's household, as well as the quality of the social and physical environment in which the household is located*" (Bonnefoy & Krieger, 2002). In terms of internationally accepted documents, adequate housing is characterized by affordability, habitability, accessibility, location, and cultural suitability (Cohre, 2004). The quality of housing itself is one of the determinants of quality of life. The issue of housing quality satisfies one of the most important human needs. With the right satisfaction of the need for housing, a person's motivation increases. Improving the quality of life has become an important part of society's development, and therefore it is necessary to address this issue. The paper aims to evaluate the connection between the country's economic prosperity and the selected researched problems of housing quality in the Slovak Republic.

1 Methodology

The paper aims to evaluate the connection between the country's economic prosperity and the selected researched problems of housing quality in the Slovak Republic

based on statistical data. The aim of the paper is to point out and evaluate the close connection between the examined variables. Due to the current epidemiological situation, the author used the secondary research of a professional publication globally and in our country to solve the mentioned problem. To achieve the goal of the paper, the author took over and analyzed important data from statistical portals. In this paper, the author used the method of analysis and synthesis to obtain and process the necessary statistical data. For better understanding, these statistics were presented graphically in the form of tables and graphs. The author used correlation and regression analysis to examine the relationship between the observed variables. Regression analysis was examined at a 95 % confidence level. The analyzes were processed in Microsoft Excel. Using correlation and regression analysis, the author examined in research question 1 the relationship between the % share of the rate of overcrowded dwellings and the average living space in housing units. The parameters used in the analyzes are expressed in Table 1 and Table 2. The resulting values of the correlation and regression analysis are expressed in Table 3 and Table 4. In solving research question 2, the relationship between the average mortgage interest rate and % household debt was examined. The investigated variables used in the correlation and regression analysis were taken from Graph 3 and Table 5. The resulting values of the investigated relationship of variables are expressed in Table 6 and Table 7.

The author focused on answering the following research questions:

Research question 1: How does the country's increasing economic prosperity affect the quality of housing in the Slovak Republic?

Research question 2: How do the development of real estate prices and low-interest rates affect households' financial indebtedness in the period 2015-2019 in the Slovak Republic?

The output of the paper is formulated answers to the results of selected research questions aimed at assessing the connection between the quality of life, quality of housing, and economic prosperity of the country.

All the acquired knowledge encouraged the author to a deeper analysis of the measurement of housing quality using a comparative, systematic analysis of scientific literature and statistical data to determine the interrelationships of the researched issues.

2 Results and discussions

2.1 A brief evaluation of the economic development of the Slovak Republic in the period 2010 - 2019

The development of the economic situation has two opposite periods. A period of prosperity and a period of recession. The economic development of a country itself depends on several factors, which we can summarize as external and internal factors. We can then use these methods to express these factors in the nominal and cumulative values we require. The best-known method of expressing a country's economic devel-

opment is using the method of Gross Domestic Product (GDP) and Gross Domestic Product per capita (GDP per capita). The author of the paper will use both presented methods for a graphical representation of the Slovak Republic's economic development.

Based on available statistical data from the Statistical Office of the Slovak Republic, we can see exponential growth in the observed period 2010 - 2019 in terms of cumulative values. These statistics are shown in Graph 1.

Graph 1 Development of GDP in nominal values in mil. EUR of the Slovak Republic in the period 2010 - 2019
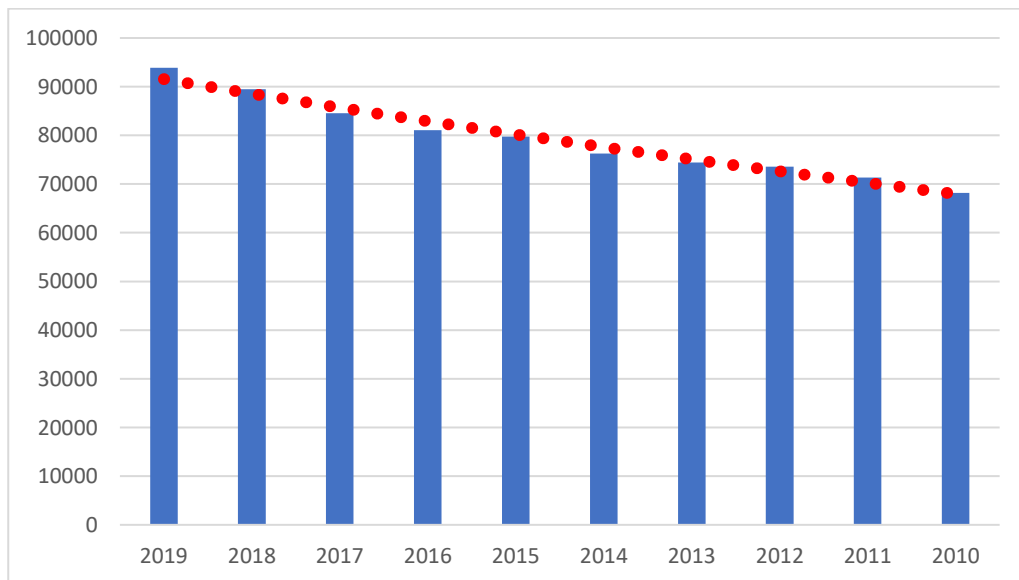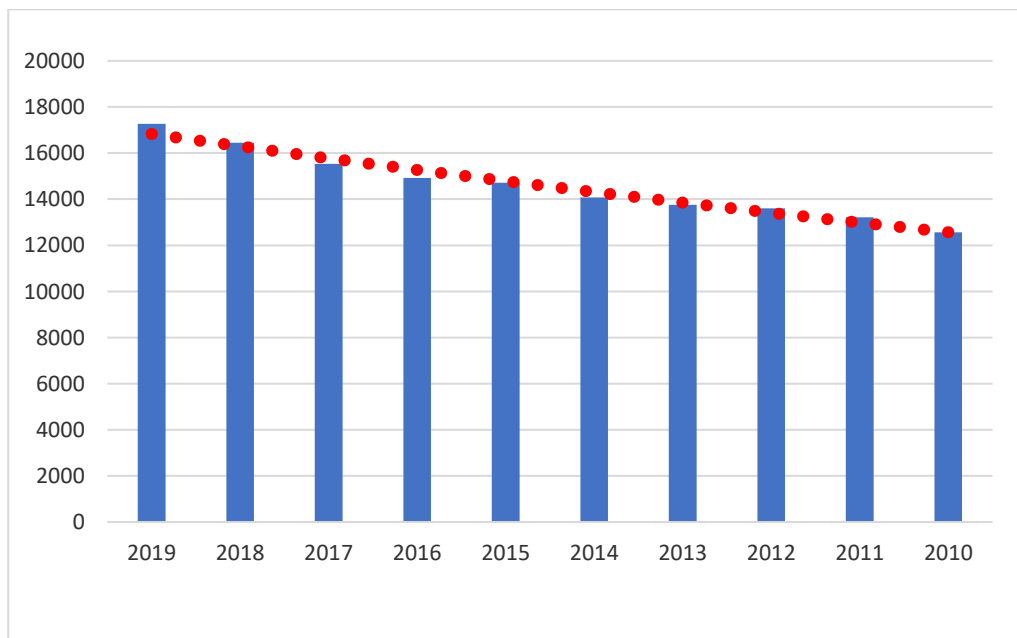

Source: own processing based on data from the Statistical Office of the Slovak Republic (2020)

From a retrospective view of the Slovak Republic's GDP growth for the observed period 2010 - 2019, regular exponential growth is recorded. The Slovak Republic experienced economic prosperity, which was to be transformed in 2020. Due to force majeure, we can assume that the Slovak Republic and other countries will see a decline in their performance. With the latest forecasts from the International Monetary Fund, the fall in GDP for 2020 will be expected to be 6 % (Statistical Office of the Slovak Republic, 2020).

From the point of view of the GDP per capita method, we can also record exponential growth in terms of cumulative values. When comparing 2019 with 2015, we can see up to a 17,4 % increase in GDP per capita. This data is shown graphically in Graph 2.

Graph 2 Development of GDP per capita in nominal values in thousands EUR of the Slovak Republic in the period 2010 − 2019

The economic development of a country creates the necessary tool for the development of capital in a given country. Based on the economic development and recorded prosperity in the Slovak Republic, the author decided to apply the findings to confirm/refute the selected research questions.

2.2 Evaluation of the research questions examined

The author of the paper focused on answering two research questions that will help him meet the goal of the paper. Using theoretical knowledge, he assessed the impact of the country's economic prosperity on selected aspects of housing quality in the Slovak Republic. Graphs 1 and 2 show an exponential increase in the country's economic development. Based on these findings, the author focused on answering the research questions.

Research question 1: How does the country's increasing economic prosperity affect the quality of housing in the Slovak Republic?

The social policy of the state helps to create social conditions for the need and quality of housing. With increasing pressure from the population on states, an important mechanism is being created to ensure that households' unfavorable living conditions are reduced. The economic development and prosperity of the country create the necessary

incentives for social policy, which can apply social needs in real form. Among the most important components of quality of life, we mention the component quality of housing. The quality of housing creates the necessary stimulus for the application of basic human rights in the field of housing.

After applying the findings on economic growth, the author of the article focused on an important component of housing quality, namely the rate of overcrowding. The population overcrowding rate is characterized by the proportion of people living in one household and rooms' number and size. Overcrowding individual households express the % share of households that do not meet the recommended standards for the number of people living in a given household type. Statistical data expressing the household overcrowding rate in the period 2010 - 2019 in the Slovak Republic were taken from Eurostat. These statistics are shown graphically in Table 1

Tab. 1 Share of the rate of overcrowded dwellings in the period 2015 - 2019 in the Slovak Republic

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
% share of over-crowded households	34,1	35,5	36,4	37,9	37,8	38,6	39,8	38,4	39,5	40,1

Source: own processing based on Eurostat data (2020)

The data expressed in Table 1 reveal a positive declining trend in the % share of household overcrowding in the Slovak Republic. The percentage of household over-crowding in 2019 was at the level of 34,1 %. From a demographic point of view, we can say that a third of a household in the Slovak Republic lives more people than is recommended for a given household type. The author decided in Table 2 to analyze the average living area m2 within the housing units in the Slovak Republic due to the findings.

Tab. 2 Average living area m2 in housing units within the Slovak Republic for the period 2010 - 2019

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Average living area m2	69,6	70,9	70,4	73,8	71,4	73,1	73,7	71,7	71,8	71,5

Source: own processing based on data from the Statistical Office of the Slovak Republic (2020)

The construction of housing units must meet strict standards and norms that protect the area's economic, social, or environmental aspects. These standards create precise rules for what the average living area of m2 is recommended for a given household

population. The average living space is recording a regular nationwide average decline, with housing units with smaller living space coming to the fore. The average living area in 2019 was 69,6 m2. One of the critical issues in assessing the quality of housing is the availability of sufficient space in the dwelling. The author of the paper examined the relationship between the examined parameters.

From the interconnectedness of the given indicators, the author decided to determine their degree of dependence using correlation and regression analysis. Regression analysis was expressed at a 95 % confidence level. The analyzes were processed in Microsoft Excel. The examined variables used in the correlation and regression analysis were for the period 2019 - 2010. The observed degree of dependence is expressed in Table 3 and Table 4.

Tab. 3 The resulting correlation between the observed aspects of the household overcrowding rate

	% share of overcrowded households	Average living space m2
% share of overcrowded households	1	
Average living space m2	0,68	1

Source: own processing based on processed data monitored parameters (2020)

Tab. 4 The resulting regression between the observed aspects of the household overcrowding rate

|	df	SS	MS	F	Significance F
Regression	1	15,78219588	15,78219588	6,88172	0,03049363 1
Resid	8	18,34680412	2,293350515		
Total	9	34,129			

Significance F

0,030493631 < 0,05

Source: own processing based on processed data monitored parameters (2020)

Based on the findings, the author can confirm that there is a regression relationship between the parameters and that the measured value at the 95 % confidence level is statistically significant A positive linear relationship has been recorded from the correlation analysis.

In 2019, the European Union conducted a 2018 survey to measure housing quality factors. These factors measured housing overcrowding within the Member States and the poverty line in terms of disposable income. The data are shown in Figure 1, which was taken from Eurostat.

Figure 1 The rate of overpopulation of housing within the European Union in 2018
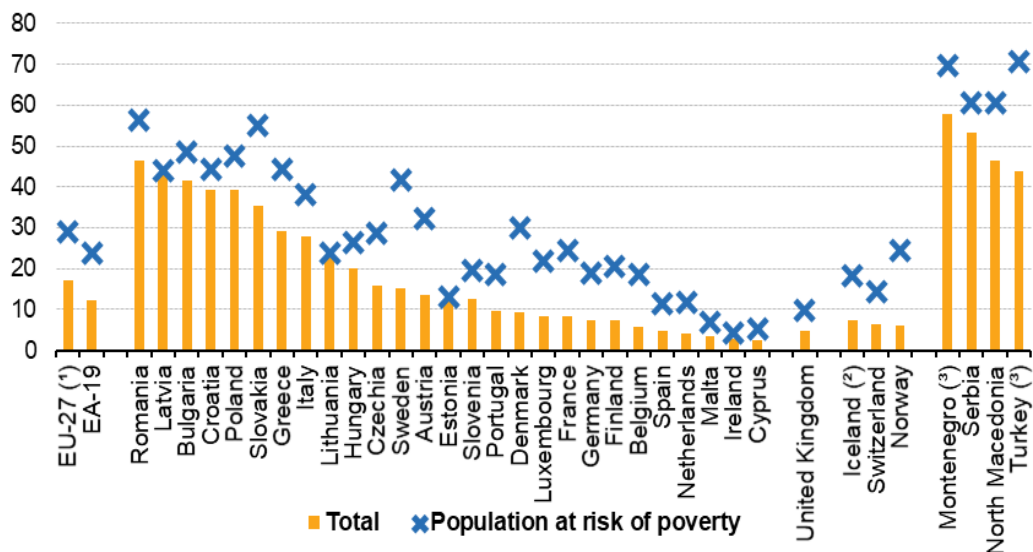
In terms of the results of the research, it was found that the highest rate of over-crowding among the population at risk of poverty (population whose disposable income per person was less than 60 % of the national median) registered in countries such as Romania (56,4 %), Slovakia (54,9 %) and Bulgaria (48,7 %).

The most common reasons for overpopulation are personal and social reasons. The declining trend of overpopulated households may also be related to the country's economic growth, which creates sufficient financial conditions for the purchase of real estate by members of the household. With the purchase of real estate, space is being created to reduce overcrowded households' problem in our conditions. This directly proportion-ally improves the quality of housing, which is reflected in the overall quality of life.

Research question 2: How do the development of real estate prices and low-interest rates affect households' financial indebtedness in the period 2015 - 2019 in the Slovak Republic?

To meet the natural need for housing, a natural stimulus is created to address the issue. The issue of housing is one of the main reasons for the indebtedness of the pop-ulation. The reason is to own insufficient resources to finance real estate. The majority of the population uses financial institutions' foreign sources to finance the purchase of real estate. In recent years, low-interest rates have prevailed in the Slovak Republic. These, together with favorable economic conditions, created an incentive to buy real estate. Interest in real estate began to grow faster than the offer of real estate for sale itself. Demand has exceeded and far exceeds supply, thus creating the conditions for a

steady rise in property prices. This creates a chain reaction, which causes more outstanding indebtedness of the population.

In the following chart 3, the author took over data on the average interest rate of mortgage interest with a fixation of up to 5 years from the National Bank of Slovakia statistics for the period 1. 2015 – 1. 2021.

Graph 3 Average interest rate on mortgage loans with a fixation period of up to 5 years for the period 1. 2015 – 1. 2021
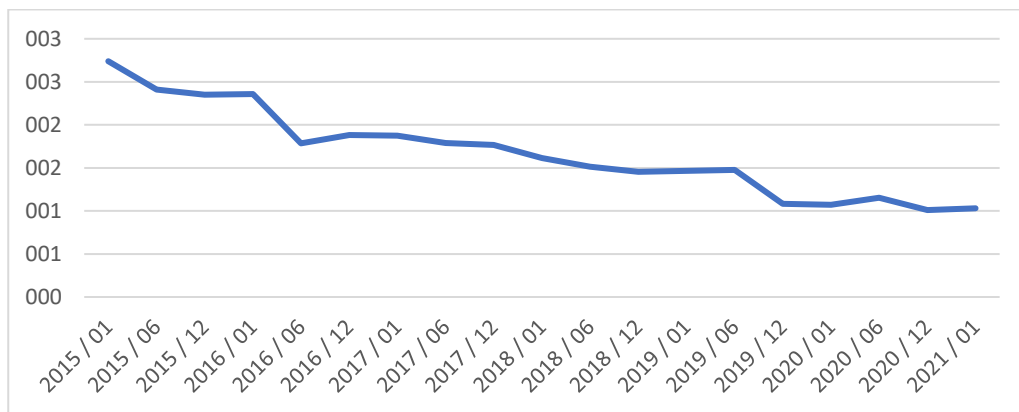
Source: own processing based on data from the National Bank of Slovakia (2021)

The average interest rate on mortgage loans is regularly falling and falls below 1 %. Favorable interest rates and still favorable bank conditions create the necessary incentives to buy real estate. The author's statement is confirmed by Graph 4, which shows the total volume of funds provided (in millions of euros) using mortgage loans for the purchase of the real estate by financial institutions for the period 8. 2017 - 1. 2021.

Graph 4 Volume of funds provided through mortgage loans for the period 8. 2017 - 1. 2021
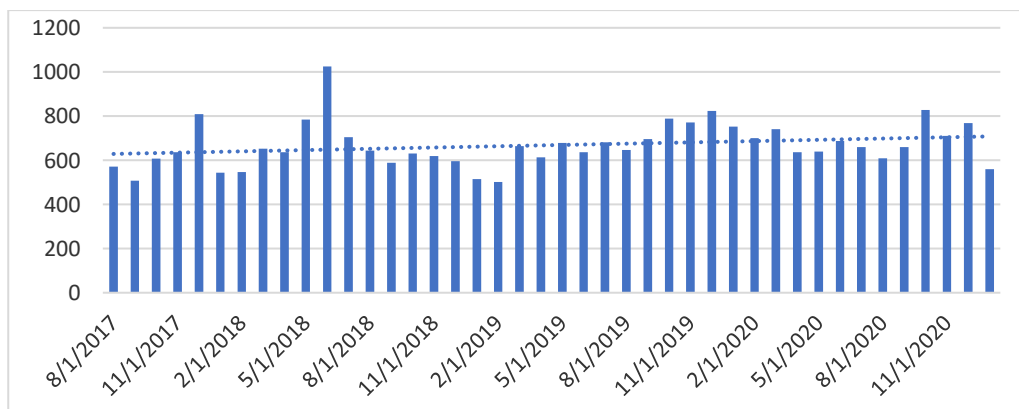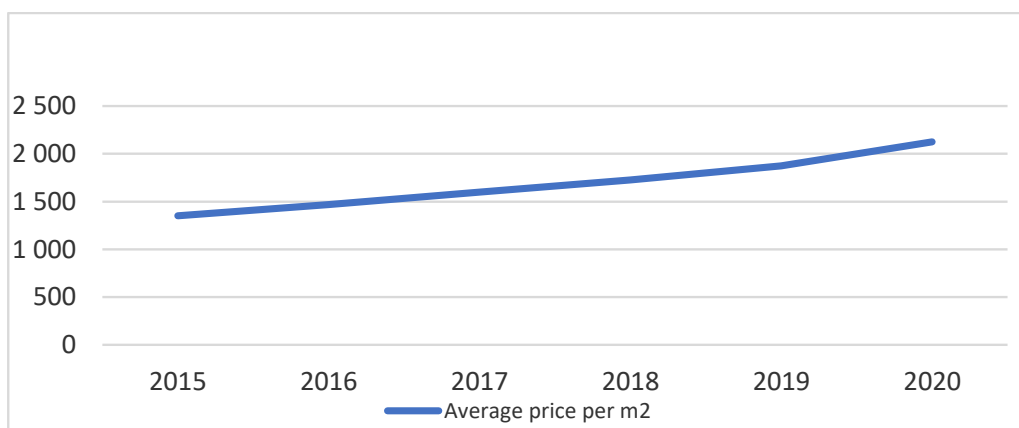

Source: own processing based on data from the National Bank of Slovakia (2021)

The volume of funds (in millions of euros) provided through mortgage loans to households reaches hundreds of millions of euros per month. The most significant volume of provided funds was in the period 06.2018, when the volume of borrowed funds reached more than 1. billion. Eur. The reason for this financial volume provided for mortgage loans changed in banking rules.

Real estate prices reach regular new highs due to the insufficient number of properties offered on the market. The average price per m2 of flats in the Slovak Republic is regularly growing, which is also confirmed by data from the National Bank of Slovakia shown in Graph 5.

Graph 5 Average price per m2 of dwellings for the period 1. 2015 - 12. 2020

Source: own processing based on data from the National Bank of Slovakia (2020)

The price per m2 is growing along with the increased demand for real estate. However, we must consider several factors on which the growth of real estate prices will depend. The most well-known factors that influence the growth of real estate prices are: personal preconditions of the applicant, technical parameters of the real estate, location of the real estate, civic amenities, or other specific parameters (seasonality). The reason for the still high growth in real estate prices is the insufficient supply of real estate, high demand for real estate, and advantageous banking products offered by financial institutions.

After taking over the OECD data, we can see in Table 5 the growth of household indebtedness in the Slovak Republic in the period 2015 - 2019.

Tab. 5 Household debt in the period 2015 - 2019 in the Slovak Republic

	2019	2018	2017	2016	2015
% share of net disposable household income	79,3	77,36	77,90	73,72	68,66

Source: own processing based on OECD data (2020)

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We can see the annual increase in household indebtedness in the Slovak Republic from the available statistical data. In 2019, the average value of indebtedness reached a level of 79,3 % of net disposable household income. Almost 80 % of net disposable income equals household debt, with a growing trend. When the interest rate on mortgage loans decreases, household indebtedness increases. The author of the paper examined the relationship between the examined parameters.

The author decided the relationship between average low-interest rates and indebted households to determine their degree of dependence using correlation and regression analysis. Regression analysis was expressed at a 95 % confidence level. The analyzes were processed in Microsoft Excel. The examined variables used in the correlation and regression analysis were for the period 12. 2019 – 12. 2015. The degree of dependence found is expressed in Table 6 and Table 7.

Tab. 6 The resulting correlation between the observed aspects of indebtedness

	The average interest rate on mortgage loans	% share of net disposable household income
The average interest rate on mortgage loans	1	
% share of net disposable household income	-0,90976	1

Source: own processing based on processed data monitored parameters (2020)

Tab. 7 The resulting regression between the observed aspects of indebtedness

	df	SS	MS	F	Significance F
Regression	1	0,746674377	0,746674	14,4070913	0,032099009
Resid	3	0,155480595	0,051827		
Total	4	0,902154972			

Significance F
0,032099009 < 0,05

Source: own processing based on processed data monitored parameters (2020)

Based on the findings, the author can confirm that there is a regression relationship between the parameters, and the measured value at the 95 % confidence level is statistically significant. A negative linear relationship has been recorded from the correlation analysis.

Favorable banking products, the relentless demand for real estate, low real estate supply, and rising real estate prices create conditions for the Slovak Republic population's indebtedness. The supporting trend about advantageous banking products creates

a psychological phenomenon of using the opportunity to borrow from the population. Everyone wants to live on their own, and the prospect of a favorable mortgage loan with a fixed interest rate for a long period of time causes the effect of indebtedness. Based on the information obtained, we can say that a low-interest rate, with the need for housing, creates an effect that causes household indebtedness.

Conclusion

The aim of this paper was to answer the author's research questions based on available statistical data. In research questions, the author focused on evaluating the connection between the quality of life, quality of housing, and country's economic prosperity. Using correlation analysis, the author of the paper confirmed the interrelationships between the examined variables. Due to the current epidemiological situation, the author of the article used the secondary research of a professional publication worldwide and in our country to solve the mentioned problem. To achieve the goal of the paper, the author took over and analyzed important data from statistical portals. In this paper, the author used the method of analysis and synthesis to obtain and process the necessary statistical data. The author used correlation and regression analysis to examine the relationship between the observed variables. Regression analysis was examined at a 95 % confidence level. The analyzes were processed separately for the researched research questions. Correlation and regression analysis were processed in Microsoft Excel.

Research question 1 - based on the analysis of the performance of economic indicators of the Slovak Republic, positive economic growth was recorded in the observed period 2010 - 2019. Using the method of analysis of statistical data, a decrease in the rate of population overcrowding in the Czech Republic was recorded in the observed period. Despite the statistical results of the decline in overpopulation rate in our conditions, the Slovak Republic is one of the worst countries in the European Union. The population overcrowding rate is closely related to the average living area of m2 per capita. In the given parameter, the average living area m2 gradually decreases with the number of built-up properties. The author of the paper used correlation analysis to confirm the relationship between the monitored parameters. There is a regression relationship between the monitored parameters, and the measured value at the 95 % confidence level is statistically significant. The decline in the country's overpopulation could be achieved by improved economic conditions in the country. Improving the economic conditions and purchasing power of the population creates opportunities for buying real estate. With the purchase of the real estate, the need for housing is fulfilled, which is reflected in the overall quality of life.

Research question 2 - the need for housing is one of the most basic human rights. Nevertheless, resolving the issue of housing is one of the most complex processes, especially in terms of funding. The Slovak Republic recorded a positive economic development, which affected the purchasing power of the population. Financial institutions were able to provide low-interest rates during the period under review, thus acquiring real estate. Using the analysis of data taken from the National Bank of Slovakia, we graphically expressed the development of interest rates by financial institutions operating on the domestic market. Thanks for reducing interest rates, causality has been created for greater interest in the financial services provided. This was also reflected in the increased

volume of funds provided by financial institutions. With the reduction of bank interest rates and the increasing purchasing power of the population, the necessary basis has been created to increase interest in addressing the issue of housing. Nevertheless, the country's economic prosperity created opportunities for rising property prices as demand for them escalated. Supply, however, did not match demand, so we saw an increase in property prices. We analyzed this parameter based on data from the National Bank of Slovakia. The author used a correlation analysis to confirm the relationship between the monitored parameters of average low-interest rates and household indebtedness in the country. There is a regression relationship between the monitored parameters, and the measured value at the 95 % confidence level is statistically significant. Low-interest rates, increased demand for real estate with the contrast of low real estate supply, which is the reaction of rising real estate prices, creates conditions for the indebtedness of the Slovak Republic population. The author evaluated this research question positively and found interconnectedness in a given relationship.

The quality of life, the quality of housing, and the state's economic development are closely related. With the proper use of economic growth, the necessary conditions are created to improve the living conditions of the state's population. This will ensure the increased quality of life and, with it, the quality of housing. Practical knowledge in the field of housing quality creates the necessary basis for the future development of theoretical knowledge directly applicable to the community's future development.

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