

## Methodological approaches to measuring quality of life

*Abordagens metodológicas para  
medir a qualidade de vida*

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RESUMO: O objetivo final do presente trabalho está na criação de uma metodologia vetorial para medir a qualidade de vida. A aplicação de uma abordagem integrada aos resultados da análise de classificação e da análise SWOT possibilitou a elaboração de uma metodologia vetorial de tipo recomendatório com o objetivo de aprimorar as abordagens de mensuração da QV. Ficou estabelecido que essa metodologia deveria incluir quatro grandes atualizações levando em consideração os desafios do amanhã. Os resultados do estudo podem ser do interesse das autoridades públicas responsáveis pela tomada de medidas destinadas a elevar o ranking internacional do país, bem como ser usados para reduzir as contradições por parte dos procedimentos de medição da QV.

PALAVRAS-CHAVE: Desenvolvimento humano; medição da qualidade de vida; sustentabilidade; bem-estar.

ABSTRACT: The ultimate goal of the present work lay in creating a vector methodology for measuring QoL. Application of an integrated approach to the results of the classification analysis and SWOT analysis enabled elaborating a vector methodology of a recommendatory type aimed at improving QoL measurement approaches. It was established that this methodology should include four major updates taking into account the challenges of tomorrow. The study results may be of interest to public authorities responsible for taking measures directed at raising the country's international ranking as well as be used for reducing contradictions on the part of QoL measuring procedures.

KEYWORDS: Human development; quality of life measurement; sustainability; well-being.

JEL Classification: I14; O15; Q56.

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## INTRODUCTION

In this day and age, every modern state strives to improve the quality of life (QoL) of its residents. The experts of the United Nations Development Programme remark that any country in the world should create conditions for a long, healthy and full life. Looking beyond today, they emphasize the rise of a new generation of inequalities in society and remark that just as the gap in basic human needs is narrowing, a new gap related to knowledge and skills needed to be competitive and access to the internet comes to the fore. The current global instability (wars, conflicts) and climate change continue to drive both available inequalities and new ones that go beyond the present day (Conceição, 2019). A characteristic feature of these shifts is the emergence of multiplicity in the economy. Economic changes do not receive sufficient justification or benefit from the existing methodological framework for measuring QoL. They need improvement to meet the demands of a new generation of inequalities. The members of the expert group of the Organisation for Economic Cooperation and Development (OECD) (Stiglitz et al., 2020) argue that plurality in the economy is important for politics, whereas politics, in turn, is crucial for ensuring the well-being of the population. It is believed that the current socio-economic system assessment methodology is over-reliant on economic indicators. Despite the fact that gross domestic product (GDP) remains one of the most powerful and informative economic indicators, it cannot provide meaningful data on the value system of societies or countries of the world. In this regard, OECD specialists propose to develop a broader dashboard of indicators that would precisely reflect a person's subjective life assessment and uncover who exactly benefits from economic growth, whether this benefit is environmentally sustainable, and what factors contribute to the realization of an individual's or a country's potential. Analysts from the European Statistical Office (Eurostat, 2020) admit that measuring QoL for different population groups and countries remains a difficult task. QoL is considered a broad concept that encompasses a number of different dimensions as well as both objective factors (material resources, health, work status, living conditions) and the subjective perception one has of them (depend on the priorities and needs of the population of a given society). Therefore, in order to measure QoL, they propose using a table of indicators covering several relevant parameters, including that providing data on a country's economic activity – GDP. The general concept of QoL (Eurostat, 2020; Shlykova and Levanda, 2020) incorporates several areas related to health, employment, family well-being, prosperity, spirituality, and environment. The work of Nekhoda, Roshina and Pak on measuring QoL (Nekhoda et al., 2018) is in full agreement with the opinion of experts from international organizations. Researchers prove that in the context of ongoing globalization, approaches to the matter should be modified or even entirely changed. They argue that the current national statistics operate with data that were proved to be useful in the past when QoL was considered a priority of the socio-economic development and central emphasis was set on the criteria for assessing social progress and socio-economic systems' functioning. However, modern conditions raise the

need to revise the established thoughts concerning such QoL parameters as health, employment, inequality, inclusion, and sustainable development. Filipenko (2017) notes that the main methodological views on the modern economic theory are mostly concentrated on explaining economic life in all its dimensions to trace the dynamics of patterns and highlight current trends. However, from the other side, they present broad opportunities in the form of a possibility to explore phenomena and processes of a global nature by means of systematic reviews and statistical/graphical methods. This fact has facilitated many researchers worldwide to propose their own approaches to measure QoL. Kislitsyna (2016) argues that, under the current conditions, economic growth is an insufficient and inadequate human progress indicator. As the most constructive solution for measuring subjective well-being, she proposes developing a single integral indicator based on a data panel on those key QoL aspects that are considered significant at the current time in a given society. Tikadar (2019) considers it relevant to investigate various QoL aspects from both subjective and objective perspectives using social indicators. Simultaneously, she declares that economic indicators should be considered as a tool designating the satisfaction of only economic needs, while social indicators should be regarded as a means for the observation and analysis of social changes. Tikadar notes that social change essentially means that people live a better life, witnessing the fulfillment of not only economic needs but also social, psychological, and spiritual. Velázquez (2016) has developed the Life Quality Index (LQI) based on two main dimensions: socio-economic (education, health, housing) and environmental (natural landscapes and artificially created amenities). The usefulness of comparing these particular dimensions was confirmed by the fact that they allow one to quantify both the achievements and shortcomings of the state policies implemented by the government during the last several years. Skevington and Böhnke (2018) went further and developed an integrated Life Quality and Well-being (LQW) model through empirical testing of overlapping and exclusive dimensions of subjective well-being (SWB) and subjective quality of life (SQoL). A characteristic feature of their model is represented by the fact that all the SWB and SQoL variables are evaluated together, and the final model explains the variance in the overall QoL. Currently, researchers are waiting for the confirmation of their model's effectiveness as the empirical part of the study is at the testing stage. Considerable attention of academic circles also sticks to measuring QoL across the country, region, city, or village. Arechavala and Espina (2016) have proposed a territorial Synthetic Quality of Life Indicator (SQLI), which includes a set of statistical data of an objective and subjective nature, making up a total of 51 partial QoL indicators. The most critical of them include income inequality (the quintile ratio), education, happiness (single indicator), deaths due to natural disasters, life expectancy at age 60 (in health), trust in the national government, satisfaction with municipal services, safety of vulnerable groups of the population, and employment. The research results obtained by Arechavala and Espina indicate that the most significant QoL aspects at the meso-level are income, education, and happiness. Nešleha (2017) assert that the QoL is essential not only within the framework of a separate human life but also

for the whole society. Researchers have noticed that its level depends on both external and internal factors. The former is established by the community in which a person lives and include income, housing, social security, health protection, and environmental safety. The latter are associated with a person and his/her way of living and incorporate optimism, adaptation to the environment, self-realization, health, and lifestyle. In a similar vein, scholars indicate that as soon as the basic life needs are satisfied, a person starts seeking to meet a higher QoL level and achieve happiness, self-realization, independence, better education, and aesthetics. Therefore, a society in which the population strives to satisfy the highest life values is more stress-resistant, productive, and socially responsible. From this it follows that society receives more benefits from people whose ultimate life goals are aimed at satisfying high-order values than from individuals concentrated on basic needs solely. Using the approach of mapping and tracing population movements in relation to the objective QoL conditions and relying on statistical data from the population census, Martinez (2019) has compared temporal QoL changes across different districts and neighborhood areas of the city of Rosario (Argentina). The conducted examination allowed him to make an inference on three main obstacles worsening the QoL. These are urbanization, overcrowding, and social isolation of vulnerable groups of the population. As a consequence, Martinez recommends selecting indicators for measuring the QoL with reference to the country's policy, inherent challenges, and population values. These suggestions were made use of by researchers from the Institute of Economics of the Azerbaijan National Academy of Sciences (ANAS) when conducting a comparative QoL assessment across economic regions, cities, and settlements of Azerbaijan (Muzaffarli, 2019). They reviewed Azerbaijan as a particular example of one of the Eastern European and Central Asian countries, where the HIV epidemic is currently progressing among the general population (East Europe and Central Asia Union of PLWH, 2018) and negatively affects the QoL of people. The developed methodology for measuring the QoL in Azerbaijan includes 36 indicators grouped into seven sub-indices: material living conditions, health, education, environmental safety, family well-being, ecology, and leisure. The study outcomes show that Azerbaijanis tend to associate QoL with the satisfaction of social aspects, namely, health, security, and education.

In general, the reviewed works on the topic are likely to cover a large set of indicators characterizing well-being, both from objective and subjective points of view. However, in order to get a balanced outlook on QoL in the context of sustainable development of the population, it is necessary to scrutinize internationally recognized methodologies for QoL assessment together with the results of a comprehensive study that takes into account the range of economic, social, and environmental QoL aspects with allowance made for sustainability. Such an extensive analysis is necessary to answer whether life is getting better and designate for which population group and under what interaction conditions (but still, this also requires identifying the vulnerable zones of methodologies and eliminating their contradictions).

The ultimate goal of this work is to elaborate a vector methodology for measuring QoL.

Hence, the research tasks are as follows:

- 1) Develop a theoretical basis for assessing QoL;
- 2) Present a typology of approaches to measuring the QoL with respect to the world practice;
- 3) Identify flaws in measuring QoL and create a vector methodology containing recommendations for achieving a decent living standard in the country.

## MATERIALS AND METHODS

Grounding on the theoretical and methodological discussion, this study aimed to create a recommendatory vector methodology for measuring the QoL of the population. The information base was represented by thematic works of researchers (Kislitsyna, 2016; Velázquez, 2016; Nekhoda et al., 2018; Martinez, 2019; Tikadar, 2019; Shlykova and Levanda, 2020) and official statistical reports of international organizations (Conceição, 2019; Eurostat, 2020; Stern et al., 2020; Stiglitz et al., 2020) and Azerbaijani public institution (Muzaffarli, 2019). As research methods, systematic review, classification analysis, SWOT analysis, and an integrated approach were used. The overall examination process included the following three stages:

1. Systematic review of various approaches to measuring QoL (Conceição, 2019; Eurostat, 2020; Stern et al., 2020; Stiglitz et al., 2020) followed by constructing a classification scheme with measuring benchmarks. The developed scheme reflects the satisfaction of the vital needs of the population in their objective and subjective manifestation. A distinctive feature of the proposed classification scheme is a set of benchmarks that measure QoL through the use of several assessment methods, various approaches to information collection, and two evaluation criteria;
2. Presentation of a typology of approaches to measuring QoL using classification analysis and based on data from academic literature (Conceição, 2019; Muzaffarli, 2019; Eurostat, 2020; Stern et al., 2020; Stiglitz et al., 2020). The result of the classification analysis is visualized in the form of a table, consisting of five blocks: QoL measurement performer, measurement name, central measurement parameters, country coverage, and measurement result;
3. Performing a SWOT analysis to identify strengths and weaknesses of the existing QoL measuring approaches and create a vector methodology with relevant recommendations for improving QoL measurement parameters and achieving a decent life in the country.
4. *Research limitations.* The study was limited to thematic literature sources

and reports published during 2016-2020 and thus did not characterize QoL beyond this time frame.

5. *The research object* was designated as the procedure for measuring QoL as an economic and social category.

*The research subject* was the detection of contradictions in existing methods and procedures for QoL measurement.

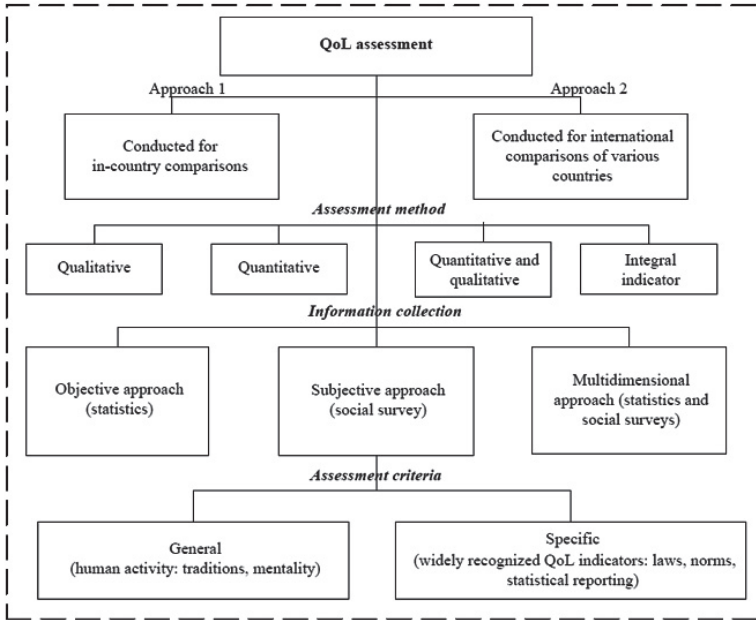
## RESULTS

Summarizing various methodologies for assessing QoL, one can clearly distinguish the three most popular of them (Conceição, 2019; Eurostat, 2020; Stern et al., 2020; Stiglitz et al., 2020). The first is based on the concept of subjective well-being. It describes the experience, abilities, state, behavior, assessments, and emotional reactions of a person to certain circumstances. The second is grounded on the concept of opportunities (the expression of expectations for a better life) as well as the priorities and values adopted in a given society. The third is underpinned by economic concepts taken from welfare economics and the equitable distribution theory (GDP maximization followed by its integration with social welfare).

It is important to note that the general understanding of QoL requires awareness of how the objective living conditions in a given society affect the subjective life assessment by its participants (Eurostat, 2020; Shlykova and Levanda, 2020). In this context, the QoL measurement is referred to as a procedure for identifying the degree of compliance of the basic parameters and conditions of a person's life with his/her individual needs and ideas about a decent standard of living. The investigation of various approaches to measuring QoL made it possible to build a scheme of benchmarks (Figure 1).

As shown in Figure 1, there are two approaches that are most frequently used to measure QoL: carried out for in-country comparisons and for cross-country comparisons. The measurement methodology predominantly has the form of quantitative assessment, qualitative assessment, quantitative and qualitative assessment, or presupposes the use of the integral indicator. The collection of information is carried out utilizing objective (statistical data), subjective (social surveys), or multidimensional approach (consolidates measurements of objective and subjective approaches). The criteria for assessing the QoL can be general (historical values regarding the QoL interpretation developed in a given geographical area during a long time – traditions, mentality) and specific (widely recognized QoL indicators – statistical reporting, laws, norms).

Figure 1. Scheme of benchmarks for assessing QoL



Source: Developed by the authors.

Today, the initiatives of many organizations measuring QoL within the framework of economic achievements, social progress, and sustainable development declare a number of urgent challenges concerning the existing methodologies for assessing QoL. Their arguments symbolize a call to update the recommendations necessary to plan and monitor the public policy of the country and the world community in a way consistent with the Sustainable Development Goals. Table 1 presents a typology of approaches to measuring QoL in the context of three conceptual methodologies in practice all around the world.

As can be seen from the table, the considered approaches to measuring QoL include both inter-country (Human Development Index, Better Life Initiative, QoL Indicators, Social Progress Index) and intra-country methodologies (Quality of life in Azerbaijan) and are recognized by international initiatives and policymakers globally (including the example of Azerbaijan). In accordance with the presented typology (Table 1), the following conclusions can be drawn:

- Methodologies considered have a different set of measurement indicators but a clear purpose and structural function;
- QoL measurement incorporates various indicators;
- Material indicators (GDP per capita, individual/household budget) play an important role in the traditional QoL assessment approach;
- In most cases, a set of indicators is applicable to different economic development levels (developed/developing nations).

Table 1: Typology of approaches to measuring QoL

Measurement performer	Measurement name	Central measurement parameters	Country coverage	Measurement result
International organizations				
United Nations (UN)	Human Development Index (Conceição, 2019)	Income, life expectancy, education. Total: 3 parameters	189	Integral indicator
Organisation for Economic Co-operation and Development (OECD)	Better Life Initiative (OECD, 2020)	Income, jobs, housing, health, work-life balance, education, social connections, civic engagement and governance, environment, personal security and subjective well-being. Total: 11 parameters	40	Integral indicator
Eurostat	Quality of Life (Eurostat, 2020)	Material living conditions (income, consumption and material conditions), productive or main activity, health, education, leisure and social interactions, economic security and physical safety, governance and basic rights, natural and living environment, overall experience of life. Total: 11 parameters	33	Accounting for objective and subjective indicators
International non-governmental organization				
Harvard Business School and Massachusetts Institute of Technology	Social Progress Index (Stern et al., 2020)	Basic human needs (nutrition and basic medical care, access to water and sanitation, shelter, personal safety); foundations of well-being (access to basic knowledge, access to information and communications, health and wellness, environmental quality), opportunities (personal rights, personal freedom and choice, inclusiveness, access to advanced education). Total: 50 parameters	149	Integral indicator
Government institution				
Institute of Economics (ANAS)	Quality of Life in Azerbaijan (Muzaffarli, 2019)	Material well-being, health, education, safety, family well-being, environment, free time. Total: 3 parameters.	1	Integral indicator



Table 2: SWOT analysis of QoL measuring methodologies

Strengths	Weaknesses
Human Development Index	
Wide country coverage (189 states)	Captures only part of what human development and QoL entail
Measures QoL within the framework of society's values	Measures the results of socio-economic activity, describing the picture of the past and not the current situation
Based upon official statistics, making QoL assessment accessible	Lacks public participation in QoL assessment
Better Life Initiative	
Extensive sample coverage: individual/household/community	Narrow country coverage (40 states)
Allows comparing countries' performance according to their own preferences in terms of what makes for a better life	Focuses on nationwide/population group average
Predicts the resources underlying future well-being based on four types of capital: economic, natural (ecosystem), social, human	Measures the results of economic activity and social progress
Quality of Life	
Extensive sample coverage: individual/household/community	Narrow country coverage (33 states)
Wide parameter base: considers material conditions, subjective assessment, and public opinion	Is in the process of being finalized in terms of sustainability
Measures social progress, well-being, sustainable development	Its representative picture is directed solely at the EU member states or EU candidates
Social Progress Index	
Traces changes in society over time (measures progress towards the UN's Sustainable Development Goals)	Research cumbersomeness and complexity
Allows systematical analysis of the relationship between economic development (determined by means of GDP per capita) and social development	Focuses on measuring social progress
Identifies strengths and weaknesses of a society	Individual rights and freedoms are assessed based on experts' views, which is not applicable to developing countries and entails one-sided subjective judgments
Wide country coverage (163 states)	
Quality of Life in Azerbaijan	
Aimed at a wide-scale QoL assessment: region/city/country	Not applicable for comparison with other countries
Takes advantage of a multidimensional approach	Fails to consider indicators related to the political environment and personal rights and freedoms of residents
Includes an expert survey of 13 independent participants	Measures economic performance

Source: based on data retrieved from the works of Muzaffarli (2019), OECD (2020), and Stern et al. (2020).

The SWOT analysis of methodological approaches presented above (Table 1) provided the possibility of identifying flaws in the most widely used measurement procedures. As such, this analysis implies a description of strengths and weaknesses of the analyzed object. The strengths include the analysis of positive factors of the internal environment of the measurement tool (competitive advantages), while weaknesses are the negative factors of the internal environment, which show the vulnerable areas of the considered methodology (Table 2).

Given the information base resulted from the SWOT analysis (Table 2), an inference can be made that, at present, no consensus in relation to a number of issues exists. This concerns, first of all, the choice of research object (population/households/individual), the choice of research parameters (person, ecosystem, society), and assessment result (system of indicators/integral indicator).

Application of an integrated approach to the results of the classification analysis (Table 1) and SWOT analysis (Table 2) enabled elaborating vector methodology for measuring QoL with introduced recommendations on how to provide a decent QoL for the population and take care of existing vulnerable areas. These recommendations are as follows:

1. Responsible parties should be guided by a dashboard of indicators informing about the material wealth of residents, sustainability, and social and environmental aspects of the assessed society. This dashboard should include indicators measuring people's lives during the economic cycle;

2. National statistical agencies should take advantage of big data potential (this concerns both estimated and expert indicators) independently of the country's economic development level;

3. Sustainable Development Goals should be activated, which requires the improvement of economic, social, and environmental capital indicators and subsequent identification of the socio-economic system's vulnerabilities;

4. In order to ensure a high QoL, its indicators should be used while making decisions at all political activity stages, from determining the country's development priorities to monitoring QoL assessment results in regard to low living standards and special attention taken of economically vulnerable groups of the population.

## DISCUSSION

Initially, this study focused on identifying benchmarks for assessing QoL within the framework of three main concepts: subjective well-being, human capabilities for shaping a subjective future, and the economy of welfare. In this connection, a comprehensive review of recent studies (2016-2020) on the topic allowed building the scheme of benchmarks for measuring QoL. Despite the identification of clear guidelines and parameters for QoL assessment, a thorough analysis of the literature showed that today QoL is measured according to different approaches. This judgment corroborates with a number of other researchers' observations, in particular, those of Lorente et al. (2018). Mikhalska-Zhila and Stolbov (2018) also argue that

QoL is a broad phenomenon that encompasses not only an individual but also households and communities, remaining a synthesis of objective and subjective, global and limited scale. Researchers believe that QoL is an evaluating concept containing the axiological foundations of the hierarchy of personal values and attitudes to the world. In this context, using the classification analysis, the present study introduced a typology of approaches to QoL measurement, which includes the methodologies developed by the UN, OECD, Eurostat, Harvard Business School and Massachusetts Institute of Technology, as well as the Institute of Economics of ANAS. Their generalization against the backdrop of QoL parameters showed that the selected subject areas of QoL have both similarities and differences. Young (2020) states that in the last decade, there has been a gradual increase in the development of key QoL indicator systems, especially quantitative ones. Apart from this, he admits that many proposed systems have combined qualitative measures with statistical data to achieve complete coverage of all QoL aspects. The results of the examination carried out within the present research evidence that this alternative approach allows assessing QoL in an international or national format as completely as possible. Though, it was found that currently, there is no measurement methodology that would comprehensively evaluate economic, social, and environmental QoL aspects against the backdrop of sustainable development. The conducted classification analysis revealed that the methodology for assessing QoL proposed by the Harvard Business School and the Massachusetts Institute of Technology largely focuses on the UN's Sustainable Development Goals with the only "but" in the form of social progress measuring framework. De Neve and Sachs (2020) believe that the 17 Sustainable Development Goals ratified by 193 states of the world and the UN itself fully correlate with the values of both people and the planet. Therefore, their inclusion in the methodology for measuring the QoL of the population may reveal some internal tensions (in a situation of a negative correlation between goals and QoL indicators) requiring comprehensive policy efforts to map a course towards an environmentally sustainable, socially just society and without diminishing QoL. To improve the QoL of the country's population, Neve and Sachs propose developing a holistic approach within the framework of economic development based on the Sustainable Development Goals Index and QoL indicators. Researchers declare that economic growth is an important driver of well-being at early stages but becomes less significant later in the development cycle. Another attempt to organize QoL aspects into a uniform structure was undertaken by Mikucka et al. (2017). They have specified two conditions that make economic growth compatible with subjective well-being over time: increasing social trust and declining income inequality. Apart from this, in order to achieve sustainable improvements in the QoL of the population, Mikucka et al. (2017) recommend policymakers use management tools to promote economic growth, protect and promote social trust, and reduce income inequality. These suggestions are shared by Radermacher (2015), who believes that modern societies need data that complement the information provided by GDP. He notes that, so far, the priority topic is to continue developing environmental and social indicators and provide a more

detailed picture of distribution and inequalities. Barrington-Leigh and Wollenberg (2019) designate that, to date, self-reported, quantitative, subjective measures of well-being, such as satisfaction with life overall, are increasingly looked to as measures of public welfare at the international and national levels, whereas regional initiatives give preference to the quality of human experience and local policy success.

In general, the investigation carried out was primarily oriented on the principle of well-planned research emphasized by Mokkink et al. (2018). They evidence that adherence to this rule guarantees content reliability, especially if the study is based on criteria that identify the strengths and weaknesses of the object under consideration. Summarizing all the above, it can be stated that the current study is characterized by high content validity, which was conducive to obtaining accurate, reliable, and clear results and can further facilitate a reasoned update of QoL measuring methodologies.

## CONCLUSIONS

The analysis made provided the ground for a number of findings. It encouraged presenting benchmarks for assessing the QoL and allowed establishing that QoL measurement is crucial for determining the subjective well-being of the population, for shaping one's future, and for the welfare economy in general. Based on the comprehensive examination of relevant data, this work developed a typology of the most widely used approaches for measuring QoL, which included those applied by the UN, OECD, Eurostat, and the Institute of Economics of ANAS. A grounded review of these methodologies revealed that modern QoL measurement methodologies are composed of different indicators, reflecting the objective and subjective aspects of human life. Even though no single approach to measuring QoL exists so far, the available ones have proven their usefulness and efficacy and therefore assist politicians worldwide in making decisions on QoL. Another achievement of this research was an in-depth analysis of strengths and weaknesses of each considered measurement methodology. Their flaws were further taken as the foundation for elaborating the vector QoL measuring methodology with recommendations directed at improving QoL assessment tools. The general essence of these recommendations is as follows:

- Indicators dashboard should include items informing about economic, social, and environmental life of an individual separately and society as the whole;
- National statistical reporting should be supplemented with a system of independent estimates;
- QoL measurement should be conducted within the framework of the UN's Sustainable Development Goals;
- Multidimensional QoL indicators should be used at all political activity stages.

The research findings provide important implications for policymakers seeking to enhance the QoL in their country. At the same time, the results achieved may be taken advantage of when developing programs directed at QoL improvement and reduction of social tension. Future work in this field will fruitfully explore the studied issue by creating an applied system of indicators.

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