One of the key issues of the systemic constitutional monitoring is the suggestion of adequate methodological solutions. Taking into account the different approaches existing in international practice, the authors propose a new solution to the problem. It will enable not only to solve the problem of constitutional diagnosis, but also to manage the process of overcoming the constitutional deficit.
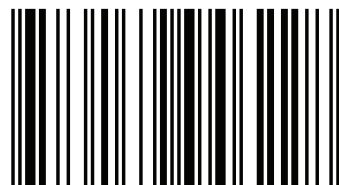
G. Harutyunyan

H. Sargsyan

R. Gevorgyan

Gagik Harutyunyan - Doctor of Law, Professor, Chairman of the Supreme Judicial Council of the Republic of Armenia, Hayk Sargsyan - Doctor of Economics, Professor, Dean of the YSU Faculty of Economics and Management. Ruben Gevorgyan - Doctor of economics, Professor.

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DIAGNOSTICS AND MONITORING OF CONSTITUTIONALISM IN TRANSITION ECONOMIES

Gagik Harutyunyan - Doctor of Law, Professor, Chairman of the Supreme Judicial Council of the Republic of Armenia.

Hayk Sargsyan - Doctor of Economics, Professor, Dean of the YSU Faculty of Economics and Management.

Ruben Gevorgyan - Doctor of economics, Professor.

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INTRODUCTION

The ongoing changes in the development of the public life put forward more effective solutions to the whole system of administration. Guaranteeing constitutionalism through ensuring the rule of the Constitution has become the main task for stable and dynamic development almost in all countries.

The post war period developments in Europe are characterized in the constitutional law as a progressive step, i.e.transition from the principle of the rule of law to the principle of the rule of the Constitution, from the rule of law state /Rechtsstaat/ to the principle of constitutional state /Verfassungsrechts staat/, from the principle of legality /légalité/ to the principle of constitutional legitimacy /légitimité constitutionnelle/. This process mainly characterizes the common logic of the nowaday European constitutional development.

Guaranteeing constitutionalism acquires a new quality and content. Constitutionalism becomes the **fundamental principle of legal regulation of the public existence of the modern society**. Consequently, the issues of strengthening the systems of guaranteeing constitutionalism, constitutional monitoring and constitutional responsibility, as well as the scientific ensuring of their legal capacity are the most urgent tasks in the domain of contemporary international developments[1].

In this paper, we referred to a certain issue. In particular, we propose methodological solutions for comparative analysis of the level of constitutionalism and based on them new approaches of the methodology of diagnostics and monitoring of the level of constitutionality.

The proposed methodological solutions may be more effective especially for studying the level of constitutionalism in the countries in transition. With their assistance, it is possible to classify countries according to the level of constitutionalism and to identify the factors that are of the greatest importance for increasing this level especially in the countries in transition.

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[1]See Harutyunyan, G. Main components of constitutional monitoring. Constitutional Justice. Bulletin of the Conference of the Constitutional Control Organs of the Countries of New Democracy.4(74) 2016

In recent years, several attempts to develop indicators for guaranteeing constitutional monitoring and the rule of law have been made by the UN /published in 2011/, as well as by the European Commission for Democracy through Law (the Venice Commission) of the Council of Europe /published in 2016/. A more holistic system of such indicators is proposed by the International Analytical Center "Constitutional Culture"[2]. A wide range of the system of indicators (characteristics of the object under study, which are accessible to observation and measurement) for measuring the level of constitutionalism was developed by Professor G. Harutyunyan, and as the author explains, it is one of the main components of systemic constitutional monitoring[3]. The International Analytical Center "Constitutional Culture" has also developed a procedure for collecting data and creating a database based on these indicators, which is presented in Annex 1 of the given paper.

The task of determining the level of constitutionalism is quite complex, since it is necessary to define measurable indicators by which the classification of countries is carried out. For the first time, the task of classifying countries according to the level of constitutionalism was considered in the book of G. Harutyunyan and A. Mavcic[4], where they introduced the idea of integrated level of constitutionalism. The importance of the research lies in the fact that it may be closely related to the issue of constitutional monitoring and constitutional diagnostics which is very relevant from the practical point of view. The essence of these concepts is very precisely defined in G. Harutyunyan's work: "Constitutional Monitoring' is a means and an opportunity to guarantee constitutional balance based on constitutional diagnostics in the dynamics of overcoming the deficit of constitutionalism and ensuring stable and dynamic development. In its turn, the notion of 'constitutional diagnostics' includes the tools and the process of assessment of constitutionalism in the society as well as the disclosure of the correspondence of real social relations to the constitutionally established values, principles and norms".[5]

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[2] See Constitutional Justice,2016, N4/74/, Pp. 7-35.
[3] Ibid.
[4] Harutyunyan, G. Mavcic A. The Constitutional Review and its development in the modern world (A Comparative Constitutional Analysis), Yerevan - Ljubljana, 1999.
[5] Harutyunyan, G. "Role of the Rule of Law Checklist in the system of constitutional monitoring (conceptual approaches)", Constitutional Justice, 3(73), 2015.

The possibilities of using cluster analysis for implementing constitutional diagnostics are considered in the work of H. Sargsyan, R. Gevorgyan and N. Kochinyan[6]. The possibility of combining the methods of cluster and discrete analysis for carrying out constitutional monitoring was proposed in the work of H. Sargsyan[7]. This paper proposes a unified methodology for conducting constitutional monitoring and diagnostics using both the methods of cluster and discrete analysis, as well as the methods for determining causal dependencies between variables and factor analysis.

The studies of recent years, especially the ones of interdisciplinary nature, show that it is impossible to ensure the full and effective operation of market forces without considering the constitutional legal environment in which the activity of the society is performed.

While referring to the interdisciplinary nature of the research, in particular, to an advantageous combination of jurisprudence and economics, it is appropriate to quote the words of A. Auzan: "... we have slightly different views on the law: if an inactive law can be of interest to the lawyer, the economist is interested in the working law, which is essentially a formal institution. Economists see operating laws as a combination of certain barriers, as well as costs, which direct mass behavior. One of the researchers of institutional changes, R. Fogel, discussed the assessment of costs, and noted that freedom of expression has always existed, but its price was different: people were burned for this expression in the 16th century, excommunicated in the 18th century, summoned to a duel in the 19th century, and criticized in the newspapers in the 20th century. That is why the direction of economics of law (Law and Economics) appeared, and not only and not so much the economic, tax or customs legislation was the interest of economists, but civil and criminal legislation"[8].

It follows from the above-mentioned that economy in general and the issues of economic relations in their systemic integrity can be the domain and subject of constitutional legal regulation, the study of which and

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[6]Sargsyan, H. Gevorgyan, R. Kochinyan, N., Constitutional diagnostics and monitoring: tools and methods of implementation, Constitutional Justice, 4(74), 2016.
[7]Sargsyan, H. Several approaches to developing tools and methods for implementing constitutional diagnostics, Almanac: Constitutional justice in the new millennium, Yerevan, 2016.
[8]Auzan A. Economy of everything. How institutions determine our life. (www.litres.ru).2014г. P. 54

finding acceptable solutions can also be carried out on the basis of monitoring the level of constitutionalism and its management.

In the global aspect, the high level of constitutionalism is characteristic for few countries. In many countries, the deficit of constitutionalism, "roughness" and sometimes distortions have increased, which has impacted numerous spheres of social life and particularly the socio-economic sphere, thus hindering the dynamic development.

Economic regulations and improper functioning of economic management institutions hinder the natural functioning of the market mechanism aimed at improving overall welfare. Today it becomes evident especially when the political-economic-administrative potential is integrated. These are delayed-action mines, and the neutralization and effective resolution of them must be sought in legal regulations that ensure sufficient level of constitutionalism.

The studies show that the negative impact of the deficit of constitutionalism is not limited to socio-economic relations. In practice, this impact has a broader nature, which in particular, is the most important factor that threatens the internal and external security of the country. As Professor G. Harutyunyan notes: "The deficit of constitutionalism is the number one internal threat to the legal security of the country"[9]. At the same time, it should be stated that ensuring internal and external security is closely linked to socio-economic developments. In particular, security safeguards are the most important factors for stimulating domestic and foreign investments. Thus, it can be argued that the impact of constitutionalism on economic relations is diverse, and this is expressed both directly and indirectly through the factor of ensuring the security of the country.

The study of the issues of constitutionalism and promotion of their effective solutions is especially important in the developing countries and in the countries with transition economies, where there is a wide gap between proclaimed constitutional provisions and existing rules. Modern positive constitutional economy also studies the impact of constitutional norms on the economy. This approach assumes certain inertia, when a change in the rules requires a certain amount of time for "adaptation" and impact on economic processes. The countries in transition are

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[9]Harutyunyan G. Ensuring legal security of the country as an important guarantee of establishment of constitutional democracy, http://www.concourt.am/

characterized not only by a rapid change in economic situation, but also by the frequency of constitutional amendments. Therefore, the classical approach of positive constitutional economy for the countries in transition is ineffective, since new changes in the rules are usually adopted before the end of the "adaptation" period of the previously adopted rules. That is why, for the countries with transition economies the tasks of classifying and correlation are more practically relevant in comparison with the use of monitoring and diagnostics methods..A new impetus to this research will be provided by the Rule of Law Checklist[10] elaborated by the Venice Commission, which will provide an opportunity to conduct a comprehensive comparative analysis and make monitoring and diagnostics methods more adequate. The above-mentioned system of indicators for measuring the level of constitutionalism developed by Professor G. Harutyunyan was put forward also considering this opportunity.

Further in this article we will introduce some representative results of the link between the frequency of amendments in constitutional rules and stable development in the countries of transition.

As it was noted, in modern conditions the choice of effective economic policy mostly depends on revealing of the deficit of constitutionalism (extent of the gap), its composition and structure, multiplicative effects and mechanisms of transferring its impact on the economy. Later, we:

✓ present acknowledged studies of constitutional amendments in the countries in transition,

✓ describe the data on the basis of which a comparative analysis may be conducted,

✓ describe the methodology for conducting constitutional diagnostics,

✓ apply the suggested methodology on the example of the countries in transition,

✓ make conclusions and recommendations for further research.

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[10]Report of the European Commission for Democracy through Law (Venice Commission) , CDL–AD (2016)007, Strasbourg, 18 March 2016.

1. Constitutional Amendments in the Countries in Transition

In the international practice, constitutional developments as constant and ongoing processes take place in parallel with social developments and mainly in the following ways:

a/ adoption of new constitutions,

b/ introduction of amendments and/or supplements to the current Constitution;

c/ consistent and systemic constitutionalization of legal acts and law enforcement practice,

d/ adoption of organic or constitutional laws,

e/ official interpretation of norms of the Constitution,

f/ settling disputes arising between the state authorities with respect to the constitutional powers thereof.

The introduction of amendments and supplements to the basic law of the country is one of the main ways of constitutional developments. In many countries of classical democracy, such amendments are introduced rather frequently, although they are not always comprehensive. For example, around 230 amendments and supplements were introduced in the Basic Law of the Federal Republic of Germany up to 2017 (since its adoption in 1949). They were introduced almost every year. At the same time, these amendments are directly reflected in the legal field and law enforcement practice.

In case if such amendments are comprehensive, the results of their implementation are manifested after a certain period due to possible legislative, institutional and other amendments and require an adequate transition period. This situation is especially typical for the countries in transition, where constitutional amendments, as a rule, concern the fundamental legal regulations of the Constitution.

To describe the frequency of constitutional amendments in the countries in transition, we use the Comparative Constitutions Project

(CCP)[11]specialized database, which contains the characteristics of national constitutions. The purpose of this project is to compile data on all written constitutions since 1789. Currently the database contains information until the year of 2014, and it is regularly updated. The very existence of such a database and its regular updates prove the importance of studying the impact of constitutions on the social and economic situation in the society. In the CCP database, one can find information on 29 economies in transition. Table 1 shows the pattern of constitutional amendments in these countries from 1991 to 2014, and this merely serves as an example. The constitutional amendments in the CCP database are divided into 3 classes, i.e. adoption of a new Constitution, introduction of amendments and supplements, and restoration of the older constitutions.

In total, 156 constitutional amendments were made, 37 new constitutions were adopted and 116 amendments and supplements were made in the countries with economies in transition during the period under review. In some countries, the number of constitutional amendments is more than 10. The above-mentioned is the evidence of rapidly changing rules of the game in the countries in transition even at the level of basic law.

At the same time, we must bear in mind that in practice every constitutional amendment presupposes the corresponding changes in laws and sub-legislative acts. Only after adopting these documents and entrenching them in practice, amendments may affect the real socio-economic relations. Earlier we mentioned that such a situation makes the study of the impact of constitutional rules on economic indicators ineffective. Therefore, the cognitive method, methods of comparative analysis and classification are much more effective in such studies.

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[11]Elkins, Zachary, Tom Ginsburg, and James Melton."Characteristics of National Constitutions, Version 2.0."*Comparative Constitutions Project*.Last modified: April 18, 2014. Available at: http://www.comparativeconstitutionsproject.org.

Table 1.Constitutional amendments in the countries with economies in transition during 1991-2014[12]

	Adoption of a new Constitution	Restoration of the older constitutions	Amendments and supplements	Total
Albania	2	0	3	5
Armenia	1	0	1	2
Azerbaijan	2	0	2	4
Belarus	1	0	2	3
Bosnia-Herzegovina	1	0	1	2
Bulgaria	1	0	4	5
Croatia	1	0	4	5
Czech Republic	1	0	7	8
Estonia	1	0	1	2
Georgia	1	1	14	16
Hungary	1	0	9	10
Kazakhstan	2	0	2	4
Kosovo	1	0	0	1
Kyrgyz Republic	4	0	4	8
Latvia	0	1	9	10
Lithuania	1	0	5	6
Macedonia	1	0	7	8
Moldova	1	0	8	9
Montenegro	1	1	0	2
Poland	2	0	1	3
Romania	1	0	1	2
Russia	1	0	5	6
Slovakia	0	0	4	4
Slovenia	1	0	5	6
Tajikistan	1	0	2	3
Turkmenistan	2	0	4	6
Ukraine	1	0	4	5
Uzbekistan	1	0	4	5
Serbia	3	0	3	6
Total	*37*	*3*	*116*	*156*

[12]In 2015-2016, constitutional amendments were made namely in Azerbaijan, Bulgaria, Estonia, Armenia, Kyrgyzstan, Latvia, Tajikistan and Turkmenistan.

We will also note that the constitutional reforms are designed to improve significantly the quality of economic relations, minimize the role of the subjective factors, overcome possible political and economic monopoly, as well as administrative and imperative interference in economic relations.

This often involves substantial reform of constitutional decisions regarding the executive branch by ensuring more active participation of the people in the formation of the executive branch, enhancing the role and responsibility of the government in ensuring stable development of the country, clarifying current, medium-term and long-term priorities, as well as implementing equivalent program and target policy.

The constitutional reforms may raise the role of the legislator, as well as the parliamentary minority to a qualitatively new level through exercising legal control over the activities of the government.

Taking into account the experience of international constitutional developments, equivalent legal procedures for the constitutional responsibility of the government and its members are envisaged.

Another important detail should be noted: constitutions of the economies in transition are close in part of the declaration of the fundamental principles. This can be explained by similar circumstances in which the constitutions were adopted and the processes that led the elites when bringing the main laws of their countries for discussion. Table 2 presents data on the declaration of the fundamental principles in the constitutions of economies in transition as of the end of 2014; in particular, data on the declaration of human dignity, rule of law, democratic freedoms and free market[13].

Table 1 indicates the declaration of the relevant principle, and zero is for its absence.

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[13]Within the framework of this study, we shall not touch upon inter-constitutional contradictions in certain countries, when the so-called principle of "the rule of law" is stipulated along with proclaiming the rule of law state and direct effect of human rights. This is only typical of the former USSR countries and should be overcome.

Table 2.Declaration of the fundamental principles in the constitutions of economies in transition, 2014

Country	Human dignity	Rule of law[14]	Democracy	Market
Albania	1	1	1	1
Armenia	1	1	1	0
Azerbaijan	1	1	1	1
Belarus	1	1	1	0
Bosnia-Herzegovina	1	1	1	1
Bulgaria	1	1	1	1
Croatia	1	1	1	1
Czech Republic	1	1	1	0
Estonia	1	1	1	0
Georgia	1	1	1	0
Hungary	1	1	1	0
Kazakhstan	1	1	1	0
Kosovo	1	1	1	1
Kyrgyz Republic	1	1	1	0
Latvia	1	1	1	0
Lithuania	1	1	1	0
Macedonia	1	1	1	1
Moldova	1	1	1	1
Montenegro	1	1	1	1
Poland	1	1	1	0
Romania	1	1	1	1
Russia	1	1	1	0
Slovakia	1	1	1	1
Slovenia	1	1	1	1
Tajikistan	1	1	1	0
Turkmenistan	1	1	1	0
Ukraine	1	1	1	0
Uzbekistan	1	1	1	0
Serbia	1	1	1	1

It follows from the Table that all countries without exception proclaimed the principles of human dignity, rule of law and democracy as fundamental principles for their countries. Most countries proclaimed at

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[14]The database is an existing rule of law, if it expressly states that it is in the wording of the constitutional text or to the direct action of constitutional guarantees of fundamental human rights principles. The principle of the rule of law is considered to be existing in the database, in case it is directly mentioned in constitutional texts or it follows from the general wording of fundamental constitutional principles, as well as guaranteeing direct effect of fundamental rights. When assessing the presence of the latter, the following circumstances were also considered: are the principles of the rule of law, legality or Rechtsstaat stipulated in constitutional texts?

the constitutional level the market-based mechanisms for regulating the economy. Nevertheless, the similarity of the proclaimed principles does not mean the similarity of socio-economic situations. The method proposed in this article makes it possible to determine and "measure" these differences.

2. Data Description

A complex of indicators is used in the proposed method of comparative analysis, in which three groups of indicators may conditionally be highlighted, based on which the level of constitutionalism may be assessed, i.e. characteristics of the rule of law state, characteristics of democratic developments and socio-economic indicators. This group of indicators is used in the literature on the constitutional economy[15].

It was already noted that to determine the level of constitutionalism, it is necessary to assess how the constitutional norms and fundamental principles are brought to life, as well as the degree of their implementation. Except for a group of socio-economic indicators, factors from the other two groups in some sense contain an element of qualitative measurement. However, these factors were measured through surveys or based on expert assessments. Such a situation leads to the fact that often these measurements can be distorted due to the methods used to collect and process data (sometimes also based on political and other preferences of the authors). To obtain more objective measurements, it is necessary to use indicators obtained from different sources by using different methods. The more sources and indicators are used, the more accurate the results will be. The process of creating the database on the measurement of constitutionalism is presented in Annex 1.

The below described multi-level method for measuring the indicator of constitutionalism allows using a relatively big number of indicators and sources. At the same time, it should be considered that the number of indicators is limited by the sample size.

In this part, we will, as far as possible, describe in detail only the data that will be used in the example describing the application of the

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[15]Harutyunyan, G., Constitutionalism: lessons, challenges, guarantees, Kiev, Logos. 2011

methodology provided in Paragraph 5 of this study. At the same time, we note that many other variables are not presented here, that could be included in the research conducted by the proposed methodology. It is necessary to note the indicators rule of law calculated by the World of Justice Project[16]. This indicator is not considered in the representative example of this article, as it is not yet calculated for several transition countries. For the example considered in the framework of this study, several sources of information are studied such as the databases of:

- World Bank, World Development Indicators[17], WDI,
- Freedom House for Economies in Transition, Nations in Transition[18], FHNT,
- Freedom House, Freedom in the World [19], FHFW,
- Quality management indicators, World Governance Indicators[20], WDI,
- Transparency International, Corruption Perception Index[21], TI
- United Nations Development Program, Human Development Index[22], UNDP HDI.
- Heritage Foundation Index of Economic Freedom 2014[23], HF.

Data from 29 countries in transition for 2014 is used for the study. Since the sample size in question is quite small, in the preliminary stage we select one variable that describes one or another component of the socioeconomic, democracy and institutional characteristics of countries. For example, corruption indicators may be found in three databases, i.e. Freedom House, World Governance Indicators and Transparency International. The choice of indicators is based on the following criteria: 1) specialization of the source of information, 2) using more sources of information to avoid biased measurements. For example, we choose indicator of corruption from the Transparency International, which is a specialized organization engaged in the measurement of corruption, and we use the data of Freedom House and World Governance Indicators to measure other characteristics.

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[16]https://worldjusticeproject.org

[17]http://data.worldbank.org/

[18]https://freedomhouse.org/report/nations-transit/nations-transit-2014

[19]https://freedomhouse.org/report/freedom-world/freedom-world-2014

[20]http://info.worldbank.org/governance/wgi/index.aspx#home

[21]https://www.transparency.org/

[22]http://hdr.undp.org/en/content/human-development-index-hdi

[23]http://www.heritage.org/index/explore

Table 3. Statistical Characteristics of Variables for Measuring the Level of Constitutionalism

	Minimum	Maximum	Mean	Std. Deviation
Electoral Process FHNT	1.250	7.000	3.991	2.037
Civil Society FHNT	1.500	7.000	3.578	1.841
Independent Media FHNT	1.500	7.000	4.526	1.665
Government Effectiveness WGI	-0.864	1.046	0.112	0.618
Political Stability No Violence WGI	-1.988	1.012	0.067	0.672
Regulatory Quality WGI	-2.089	1.675	0.138	0.877
Rule of Law WGI	-1.331	1.365	-0.067	0.724
Voice and Accountability WGI	-2.222	1.169	-0.093	0.954
Political Pluralism and Participation FHFW	0.000	16.000	10.034	5.179
Freedom of Expression and Belief FHFW	1.000	16.000	10.690	4.804
Associational and Organizational Rights FHFW	0.000	12.000	7.862	4.015
Personal Autonomy and Individual Rights FHFW	3.000	15.000	9.966	3.530
Corruption Perception Index TI	17.000	69.000	40.483	13.514
GINI index WBWDI	24.000	44.000	31.690	5.333
Poverty headcount ratio at national poverty lines (% of population) WBWDI	3.000	32.000	17.276	7.973
Property Right HI	5.000	90.000	37.931	18.685
Human Development Indicator UNDP	0.624	0.880	0.774	0.065

This approach allows using all three sources of information, and measuring the level of corruption by means of special-purposed indicator. It should be noted that already at this stage, it is necessary to conduct a correlation analysis and select a variable from the set of characteristics with a high value of correlation coefficients.

Particularly, in this sample the correlation coefficient among all three indicators of corruption exceeds the value of 0.9. Such an approach makes it possible to be confident that, without losing information, we reduce the number of investigated variables, which makes it possible to conduct further studies in a small sample of countries.

The Table 3 lists all the variables that we have chosen in the manner prescribed above for conducting the research, as well as the statistical characteristics of these data. Next to the name of the variable, the source of the information and the relevant database are indicated. A total of 17 indicators are considered.

3. Methodology for Conducting Constitutional Diagnostics

To determine the level of constitutionalism and the impact of indicator systems, we propose a multi-level approach, which is schematically illustrated in the following figure. The preliminary stage of this method is described in the previous paragraph.

In the conceptual scheme for determining the level of constitutionalism and its analysis, we propose conducting research in 5 stages:

1. Definition of the integrated level of constitutional stability;

2. Definition of latent factors, or the most important variables characterizing the level of constitutionalism (factor analysis allows to determine such factors, thereby reducing the number of explanatory variables for further research);

3. Division of countries into relatively homogeneous clusters and study of the characteristics based on the results of inter-cluster division;

4. Intra-cluster research for identification of the most important characteristics and most typical countries.

5. Development of proposals for managerial decisions.
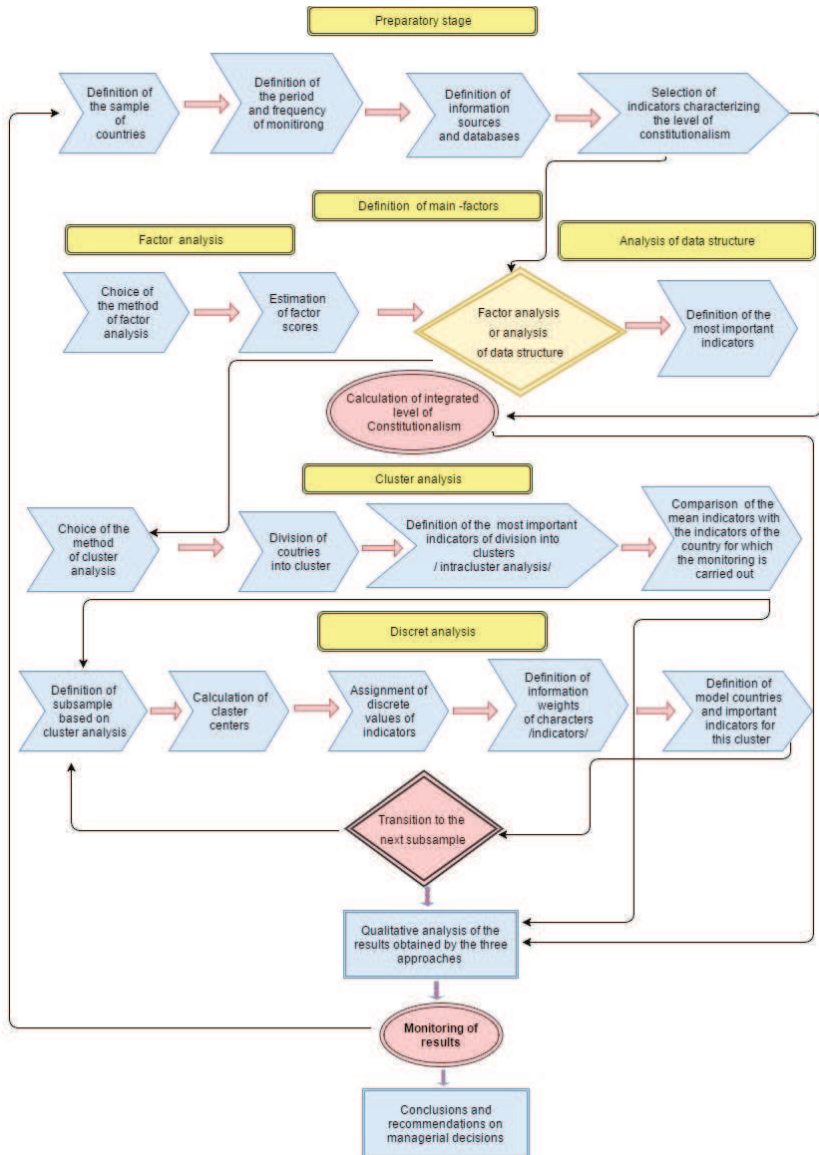
Figure 1. Conceptual Scheme for Determining the Level of Constitutionalism and its Analysis

Conducting comprehensive studies of the above-mentioned stages on the basis of a comparative analysis of countries, with some periodicity,

formulates a unified methodology for constitutional diagnosis. Analytical methods of all stages, which form part of the methodology, may be used separately, but the totality of these methods, the logic of the sequence of steps and the step-by-step use of the results obtained make it possible to deeply and comprehensively study the issue of measuring the level of constitutionalism. More important, however, is the circumstance that the methodology makes it possible to propose a set of actions necessary to implement the measures aimed at restoring the deficit of constitutionalism and managing them.

The methodology allows monitoring the change in the integrated level of constitutional stability for a particular country, understanding whether the situation of countries has changed in clusters, determining changes in the most important indicators which divide countries into clusters, as well as determining changes in the most important indicators within clusters.

It should be noted that this approach is a comparative analysis of the level of constitutionalism, since the results obtained for a certain country make sense only in comparison with other countries provided in the sample. In this sense, an adequate sample of countries is important for the application of this method.

The countries with economies in transition, which over the past decades have undergone a very similar path of constitutional reforms, are a homogeneous sample for comparative analysis. At the same time, the homogeneous sample leads to the fact that it often turns out to be rather small. This circumstance imposes some limitations, which are taken into account in the proposed approach. Particularly, at the preliminary and first stages of the method, the number of explanatory variables is reduced as much as possible in such a way as to "not lose" important information.

3.1.Integrated Level of Constitutional Stability

In the work of G. Harutyunyan[24], an integrated indicator of constitutionality is proposed as an instrument of constitutional diagnostics, which is presented as follows:

$$U_i = \sum_{j=1}^{m} \left[\frac{\left(X_{ij} - X_j^{(3)}\right)}{\sigma(X_j)} \prod_{\substack{\beta=1 \\ \beta \neq j}}^{m} (1 - \gamma_{\beta j}) \right] \qquad (1)$$

Where U_i is the integrated level of constitutional stability,

x_{ij} is the characteristics of the j indicator of the country (or group) i,

$x_j^{(3)}$ is the characteristic of the reference indicator (mean value, median, etc.)

$\gamma_{\beta j}$ are the coefficients of pair correlation,

$\sigma(x_j)$ is the variation of the x_j indicator.

It makes sense to conduct this analysis using only the indicators which have a sufficiently high level of correlation. The use of indicators with low level of correlation leads to an unreasonably high specific weight of this indicator in the integrated indicator. The elimination of possible distortions also necessitates the development of other instruments proposed in the article. When calculating the integrated indicator for countries in transition, we will use highly correlated indicators to avoid biased assessments.

3.2. Factor Analysis

The goal of factor analysis is to reduce the number of explanatory variables with the minimum possible loss of initial information. At the same time, the higher the correlation between the initial data, the more adequate the results will be. The principal component method[25] is the main method of factor analysis, and we consider it appropriate to apply this method. The goal of factor analysis is to reduce the number of

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[24]Harutyunyan, G., Constitutional Monitoring. – Yerevan: Njhar, 2016.
[25]R. L. Gorsuch, Factor Analysis, 2nd Edition

explanatory variables with the minimum possible loss of initial information. The analysis of the main components is based on the mathematical method of finding the eigenvalues and eigenvectors of the correlation matrix. The basic equation of factor analysis is expressed as follows:

$$R = AA',$$ (2)

Where R is the correlation matrix of initial variables, A is the matrix, each element of which is a_{ik} component load of the variable i (row) on the k component (column).

The complete variance of each variable can be decomposed into components using the component load coefficient, based on the circumstance that the sum of the squares of the component loads is equal to the eigenvalue of the component under consideration:

$$\lambda_i = \sum_i^N a_{ij}^2$$ (3)

where N is the number of variables.

In this paper, we will use the analysis of the main components by choosing not all components, but only those that have the greatest impact on the variance. To determine the components with the greatest impact, we use the concept of Communality. It is defined as the sum of the squares of the load coefficients on the components. In other words, the sum of the squares of the load coefficients on the column means the eigenvalue - components, and the sum of the values on the row - communality. In general, communality is expressed by the following formula:

$$h_i = \sum_j^M a_{ij}^2,$$ (4)

where M is the number of variables.

The notion of communality is very important in situations where a small sample is being studied. In general, a sufficiently large sample is necessary to obtain satisfactory measurements using factor analysis. In our case, the sample consists of 29 countries with economies in transition. In such cases, satisfactory results can be obtained in the case when the

mean value of the communality is sufficiently large[26]. In our study, in order to obtain a high mean value of the communality, we first perform a correlation analysis of the variables included in the study in the preliminary stage[27]. The variables that have a low value of the correlation coefficient, in the further analysis are used with the rest of the variables as separate variables.

To determine the number of factors, we use the Kaiser criterion. Only the factors with values greater than 1 are selected. To perform the factor analysis, we apply the "Quartimax" method of rotation. Using the obtained factor structure, we construct measurements of the values of factors for each object, in our case for each country, which are then used in cluster and discrete analysis.

In the literature, the method of using measurements of the values of factors obtained in factor analysis by cluster analysis is sometimes called tandem analysis[28]. Some authors[29] point out the disadvantages of this approach stating that when using the values of factors, certain information, that would be used in the direct implementation of cluster analysis. is lost. However, most researchers indicate that the use of tandem analysis is very useful and reasonable at least from a practical point of view[30]. Nevertheless, in the cases when the use of factor analysis leads to a sufficiently large loss of information, as an alternative to factor analysis we offer an analysis of the structure of relations, which also allows to reduce the number of explanatory variables.

Thus, in the proposed approach of assessing constitutionalism, factor analysis and analysis of the structure of relations are alternative at the second stage of the research (see Figure 1).

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[26]MacCallum, R.C., Widaman, K.F., Preacher, K.J., & Hong, S.. Sample size in factor analysis: The role of model error. Multivariate Behavioral Research, 36, 611-637, 2001

[27]Kristine Y. Hogarty, Constance V. Hines, Jeffrey D. Kromrey, John M. Ferron and Karen R. Mumford, The Quality of Factor Solutions in Exploratory Factor Analysis: The Impact of Sample Size, Communality, and Over-determination. Educational and Psychological Measurement, 2005, 65, 202

[28]Elder J. Knowing when to factor: Simulating the tandem approach to cluster analysis, Proceeding of the Sawtooth Software Conference. p. 101-108, 1999.

[29]Arabie P., Hubert L. Cluster analysis in marketing research // Advanced methods of marketing research. Oxford, 1994.

[30]Fiedler J., McDonald J. Market fragmentation: Clustering on factor scores versus individualvariables,paper presented to the AMA Advanced Research Techniques Forum.1993.

3.3. Analysis of the Structure of Relations

Analysis of the structure of relations is based on the definition of a generalized characteristic of the features of the mutual relations between the variables of the system under study[31]. It is a certain "graph[32]" with vertices corresponding to the variables of the system, edges corresponding to the direct connections, and paths corresponding to the mediated connections. The absence of an edge (path) between the vertices i and j means the absence of a direct connection between the variables x_i and x_j, and the absence of a path means the absence of a mediated connection. If the system does not divide into many subgraphs, it is said that the system is integral. Here we briefly describe the essence of this method. A more detailed description can be found in the work of Yu. Gavrilets[33].

Let's consider a complex real phenomenon that is modeled by a multidimensional random variable $\xi = (\xi_1, \xi_2, \cdots, \xi_{n,})$, which takes the values $X = (x_1, x_2, \cdots, x_{n,})$ from some n-dimensional space and is characterized by the distribution density P (x). We denote by $I = \{1,2, \cdots, n\}$. ξ_A, X_A are subvectors composed of components whose numbers fall into the set $A \in I$. Let (i, A, j) be nodes of Markov triple.

The structure of the random variable $\xi = (\xi_1, \xi_2, \cdots, \xi_{n,})$ and its density is the symmetric graph $\Gamma(i), i \in I$, for which the equality $P(X_i | X_A, X_j) = P(X_i | X_A)$ holds for all X_j and for all possible Markov triples. A is the set of nodes through which passes any circuit of the graph Γ connecting nodes i and j. If the graph Γ (i) is the structure of a random variable ξ, the nodes j on the graph, that are connected by an edge to the node i, indicate the variables ξ_j that contain all information from the set $(\xi_1, \xi_2, \cdots, \xi_{i-1}, \xi_{i+1}, \cdots \xi_{n,})$ about the variable ξ_i.

In other words, knowing the value of $\xi_i = X_j, j \in \Gamma(i)$, we cannot refine the prediction ξ_i by adding any other variables from the set. This property of the structure allows to perceive the parameters containing the maximum amount of information about this variable as direct causes. To determine the structure of relations, either linear regression analysis or

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[31]Gavrilets, Yu., Structure of relations and causal dependencies between variables, Mathematics in Sociology. Modeling and information processing. Moscow.: Mir, Pp. 135-150, 1977.

[32]A graph is a collection of a non-empty set of vertices and links between vertices, the main object of studying the mathematical theory of graphs.

[33]Gavrilets, Yu., Socio-economic modeling. Systems and models. Economy, Moscow, 1974.

partial correlation coefficients are used. Elements of the input information matrix for the analysis of the structure of relations are selected at the stage of preliminary data processing described in the "data description" paragraph.

The need to involve analysis of the structure of relations is due to the circumstance that in some cases, when conducting constitutional diagnosis of the use of only paired dependencies is insufficient. Knowledge of the structure of relations makes it possible to identify a group of variables that have the greatest influence in the set of explanatory variables. In particular, the distribution function $P(x)$ can be transformed into subsets, depending on a smaller number of explanatory variables, which are then used in cluster analysis.

Thus, in the proposed approach of assessment of constitutionalism, both factor analysis and analysis of the structure of relations can be used. The factor analysis reveals latent factors, which are the most important reasons for the differences between countries according to the level of constitutionalism, while the analysis of the structure of relations reveals the variables from those initially selected, which have the greatest impact on the classification of countries. In general, it is possible to use both methods in parallel. Anyway, in the approach used to measure the level of constitutionalism, we propose to apply one of them depending on the situation. In particular, we propose to use the analysis of the structure of relations in the case when factor analysis does not provide satisfactory results. Further in this article, we apply factor analysis, which in this case provides a fairly good definition of latent factors that affect the differences between countries according to the level of constitutionalism.

3.4. Cluster Analysis

Cluster analysis provides a set of methods for classifying multidimensional observations, each of which is described by a set of initial variables.

There are two main methods of the cluster analysis; I. e. Hierarchical method and K-means method[34]. In this article we will examine the algorithm that uses Two-step cluster analysis method, particularly

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[34]Brian S. Everitt, Sabine Landau, Morven Leese, Daniel Stahl, Cluster Analysis, 5th ed.,2011.

algorithm of cluster analysis with the usage of both basic methods. The algorithm is implemented in the SPSS Package[35]. So the detailed information about this method can be found in the documentation of the SPSS Package[36].

The advantage of the two-step cluster analysis method is not only in the possibility of identifying the most optimal division, but also in the feasibility of determining the most important factors that define this optimal division, as well as studying the characteristics of the division.

We suggest using the Euclidean distance for cluster analysis. In our case, is it will be the distance between countries i and j

$$d_{ij} = \sqrt{\sum_{m=1}^{n}(x_{im} - x_{jm})^2}, \tag{5}$$

where x_{im} is the value of the k character for country i, and n stands for the number of explanatory variables.

When the i and j classes are combined into the k class, the distance between the new k class and any other h class is recalculated according to the following formula:

$$d_{hk} = \left(n_i/n_k\right)d_{hi} + \left(n_j/n_k\right)d_{hj} \tag{6}$$

Where n_i, n_j, n_k are the numbers of objects in i, j, k classes respectively.

The distances between other classes remain unchanged. As a measurement of connectivity, we take the ratio of the mean intra-cluster distance to the inter-cluster distance:

$$\pi = \frac{a_i + a_j}{2b_{ij}} \tag{7}$$

Where a_i and a_j are mean intra-cluster distances of classes i and j; b_{ij} is the mean inter-cluster distance between the same classes.

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[36]The SPSS Two Step cluster component, Technical report, available at http://www-01.ibm.com/support/knowledgecenter/SSLVMB_21.0.0/com.ibm.spss.statistics.help/alg_twostep.htm.

3.5. Discrete Analysis

The next step in measuring various parameters of constitutionality involves the use of discrete modeling methods.

The methods of discrete analysis are widely used in various fields of science and technology for the classification and recognition of images[37]. We apply these methods to study regularities and diagnose the processes of constitutional development. The possibility of such an approach is described in the work of H. Sargsyan and others[38].

Generally it is assumed, that n objects and m characters (that characterize these objects) are specified, and sometimes it is said that T matrix is specified. Let's define the concept of "test". Let's assume that the set of characters $i_1, i_2, \ldots, i_l$ forms a test, in case the rows of the newly obtained table differ from each other after deleting all T signs from the table, except for the listed ones. The concept of "deadlock test" is the next important object of discrete analysis. A test is called a deadlock if no subset thereof is a test. It follows from this definition that the rest of the characters (columns) will no longer be a test, when any column is removed from the T deadlock table. The task of the discrete method is to define classes of objects without preliminary statistical hypotheses about those objects. That is where most importantly the approach differs from the cluster analysis.

For better delineating let there be given a set of homogeneous objects $E = \{e_1, e_2 \ldots, e_m\}$ and a set of characters $P = \{p_1, p_2 \ldots, p_n\}$ that featuring these objects. Each object is specified by a set of n characters, and let us define by t_{ij} the value of the character j for the object i, $t_{ij} \in \{0, 1, \cdots, r\}$, where $r \geq 2$, $i = 1, 2, \cdots, m$, $j = 1, 2, \cdots, n$. Supposing that all the objects from the set E have certain characteristics and differ in the characters of the set P, in other words, all the rows of the table $T = (t_{ij})$ differ.

As for defining the notion of "test", a set of subset of characters is suggested that forms a test if, after deleting all the characters from the table T, except for those listed, the rows of the newly obtained table differ from each other.

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[37]Zhuravlev, Yu., On the algebraic approach to solving problems of recognition or classification, Problems of Cybernetics, vol. 33. Moscow, Nauka, 1978.
[38]Sargsyan H., Tonoyan,G., Kochinyan, N. Discrete modeling in the problems of recognition and classification. Yerevan, Zangak, 2015

The notion of "dead-end test" is next important object of discrete analysis. A test is called a Dead-end if no subset thereof is a test. From this definition it follows that if any column is removed from 'the T dead-end' table, the rest of the characters (columns) will no longer be a test.

It follows from the definition that the Dead-end test is the result of a locally maximal compression of the original T-matrix, in which it is still possible to distinguish countries from different classes. With the further compression of the T-table, this property is lost. Dead-end tests are non-redundant descriptions of the countries characterized by T-matrix rows.

It is natural to assume that if a certain character and the corresponding column fall into a large number of Dead-end tests, the test will become important. This idea leads to the introduction of the notion of 'measure of importance'. So let k be the total number of Dead-end tests for the table T, k(j) be the number of Dead-end tests containing the column corresponding to the j-th character. The quantity $P(j) = {k(j)}/{k}$ is hence called the importance of the j-th character in the classification of objects E on the characters of P. The measure introduced in this way has proved to be useful in solving a number of applied problems[39]. It can also be used successfully to determine the importance of characters within clusters for the algorithm proposed in this article for determining the level of constitutionalism.

Thus, the information weight P(j) of the character shows the measure of the significance of the character (indicator). Such information is useful for creating tools for managerial decisions, when the task is to "transition" the country to a cluster with the highest level of constitutionalism.

The above-mentioned definitions are the basis of discrete modeling method and allow defining important notions for our research like information weights, through which we can determine the importance of characters and the most typical objects (countries).

Within the framework of the study of countries by the notions of discrete modeling such as "diagnostic test", "screening test", etc., the problems of "image recognition" for countries are solved, and in particular, they define:

✓ information weight or "importance" of the indicator (evaluation of impact force on the phenomena under consideration);

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[39]Zhuravlev, Yu., Ryazanov V., Senko O., "Recognition". Mathematical methods. Software system. Practical applications. Moscow, Phasis, 2006.

✓ information weight of the country, according to which objects can be classified and divided into clusters;

✓ the most typical object in the given class.

The cluster analysis allows dividing countries into groups with similar characteristics and determining the indicators that are most important for the division obtained, or, which is the same thing, the indicators are the main characters of difference between the groups. Thus, by dividing countries into clusters, we obtain relatively homogeneous classes of countries to which the methods of the Discrete analysis are applied. To apply the method of the discrete analysis to the problems of constitutional stability, we need to calculate 'the mean value' of the character in a cluster, and then determine the deviations and assign the corresponding values to the countries. The same procedures are repeated for each cluster obtained. As a result, we obtain the most important characters, as well as the most typical countries for all clusters.

4. Definition of the Level of Constitutionalism in Countries in Transition (Representative Example)

In this paragraph, we analyze the level of constitutionalism in transition countries based on the above-mentioned methodology, and using the data prescribed in Paragraph 3. Before conducting the study, all the variables in Table 3 are standardized to ensure the comparability of the measurement scales.

We calculate the integrated level of constitutionalism on the basis of the characteristics of the rule of law state and democracy developments. The characteristics of socio-economic indicators have low values of correlations with other variables (see Annex 2). As indicated in Paragraph 4, the use of such variables in the measurement of the integrated level of constitutionalism leads to some biased measurements.

The analysis of the accumulated data leads to the construction of the index for the integrated level of constitutional stability on the basis of formula (1). We made some data transformations to construct the index in such a way that higher index values correspond to a better situation with constitutional stability. The results are illustrated in Figure 2.
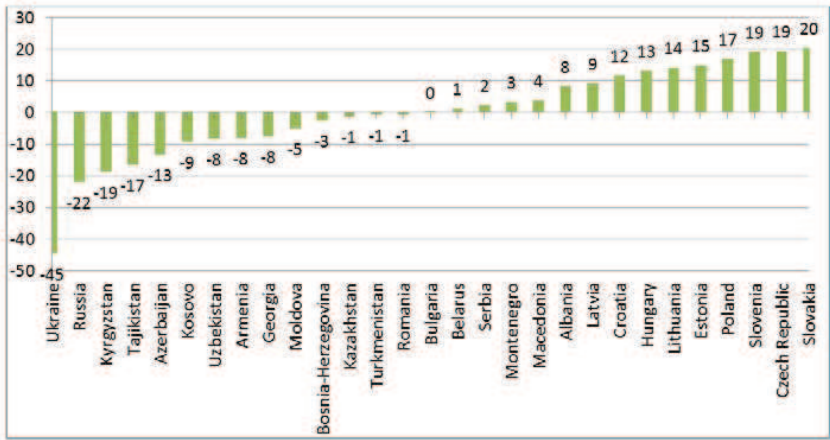
Figure 2. Index of the level of constitutional stability,2014

As can be seen from the Figure, countries in transition can be divided into three groups according to the level of constitutional stability, i.e. countries where the indicator of constitutional stability has a negative value, countries where the indicator level is close to zero and countries with a positive level of constitutional stability. The above illustrated analysis shows that even a relatively homogeneous group of countries with economies in transition has quite different situations according to the level of constitutionalism. From Figure 2, we can conclude that countries can be divided into certain clusters that have rather similar characteristics. At the same time, the index of constitutional stability gives only a very approximate idea of the level of constitutionalism, as it leads to biased measurements when considering variables that have a low correlation with the rest of the variables. Nevertheless, this index is potentially useful for further research, as well as for the initial presentation of the ratio between countries according to the level of constitutionalism. As it was noted in paragraph 4, to conduct a factor analysis on a small sample, it is necessary to use variables with a high correlation coefficient. The Annex 2 contains the table of correlations of 17 variables selected in the preliminary stage. It can be seen that 4 variables have relatively low correlation coefficients with respect to other variables considered. The table shows the correlation values in the absolute value below 0.7. According to our approach, the following 4

variables, i.e. the indicator of political stability, Gini index, Poverty Headcount ratio and Human Development Indicator are not considered in the analysis, but are directly included in cluster analysis. The rest of the variables are analyzed using factor analysis to detect latent explanatory factors.

Table 4. Rotated Component Matrix

	Component	
	1	2
Civil Society FHNT	-.893	-.426
Political Pluralism and Participation FHFW	.858	.482
Freedom of Expression and Belief FHFW	.851	.505
Associational and Organizational Rights FHFW	.850	.506
Electoral Process FHNT	-.825	-.522
Voice and Accountability WGI	.803	.580
Personal Autonomy and Individual Rights FHFW	.764	.585
Independent Media FHNT	-.711	-.656
Government Effectiveness WGI	.439	.862
Property Right HF	.451	.845
Rule of Law WGI	.521	.844
Corruption Perception Index TI	.529	.820
Regulatory Quality WGI	.604	.730

As a result of factor analysis for the rest of the 13 variables, 2 latent factors are detected that can be conditionally called: 1) Factor of Democracy Developments of countries, 2) Factor of Institutional Development of countries. Indeed, in the Table 4, the standard report of factor analysis in SPSS is presented for the rotated component matrix, which indeed shows that the first factor is related to the variables listed in the first 8 rows of the Table 4, and the second factor is related to the variables listed in the last 5 rows of the Table.

Meanwhile, the first eight variables characterize democracy processes, whereas the last five variables - the level and quality of development of institutions in countries in transition.

The following table shows that the level of commonalities obtained as a result of factor analysis is very high. All values of communities exceed the value of 0.9. In addition, the identified factors account for 95.3% of the variation.

Table 5. Communalities obtained as a result of factor analysis

	Initial	Extraction
Electoral Process FHNT	1.000	.952
Civil Society FHNT	1.000	.978
Independent Media FHNT	1.000	.936
Government Effectiveness WGI	1.000	.936
Regulatory Quality WGI	1.000	.898
Rule of Law WGI	1.000	.983
Voice and Accountability WGI	1.000	.982
Political Pluralism and Participation FHFW	1.000	.968
Freedom of Expression and Belief FHFW	1.000	.978
Associational and Organizational Rights FHFW	1.000	.978
Personal Autonomy and Individual Rights FHFW	1.000	.926
Corruption Perception Index TI	1.000	.952
Property Right HF	1.000	.918

As already noted in Paragraph 4, such values of communalities and explanated variations allow to state that the results obtained with the help of factor analysis are rather good despite the small sample. Due to the satisfactory results of factor analysis, in this particular case it is possible not to use the analysis of the structure of relations.

Thus, while using the factor analysis, two latent factors were revealed, i.e. Factor of Democracy Developments and Factor of Institutional Development of countries, the values of which will be used in cluster analysis. The recent studies show that for a precise definition of the level of constitutionalism, it is necessary to consider the set of variables. At the same time, a reduction in the number of explanatory variables is necessary to conduct research, especially in a small sample of countries. That is why determining latent factors, that cause changes in some groups of explanatory variables, is very important for the proposed methodology. With the help of the Factor Analysis and studies carried out at a preliminary stage, we selected the variables that are used in Cluster analysis and then in Discrete Analysis for studies within clusters:
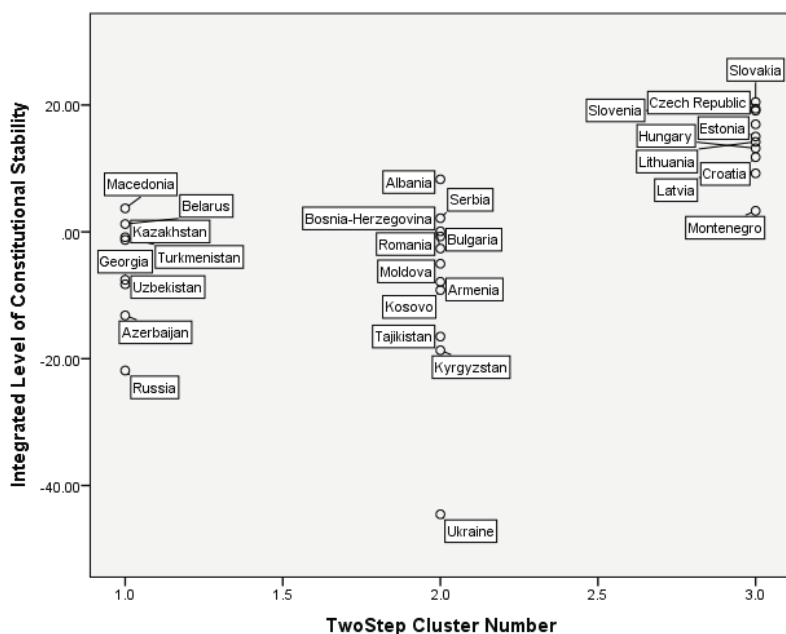
1) Gini index,
2) Poverty headcount ratio,
3) Human Development Indicator,

4) Indicator of political stability,
5) Factor of institutional Development,
6) Factor of Democracy Developments,

In the "Data Description" paragraph we have already mentioned that three groups of indicators are identified, which are used to measure the level of constitutionalism. These are the characteristics of the rule of law state, democratic developments and socio-economic indicators. Our analysis revealed that apart from these three groups, it is also necessary to consider separately the indicator of political stability. Indeed, the rest of the above-mentioned indicators are a part of one of the mentioned groups. The first three embrace the group of socio-economic characteristics, and it is impossible to identify the latent factor based on the latter. The 5-th factor is characteristic of the rule of law state, and the 6th factor is ascribed to democracy developments.

Thus, the Two-step cluster analysis method makes it possible to identify the optimal division of countries into clusters. The analysis showed that division of countries into 3 clusters is the most optimal option. Figure 3 shows the division into clusters, as well as the integrated level of constitutional stability, calculated by formula (1).

Figure 3. Level of the indicator of constitutional stability in clusters (2014) based on optimization using two-step clustering method

Figure 3 highlights the effectiveness of the cluster analysis for monitoring of constitutionalism.

Figure 4 shows a standard SPSS report on the importance of each factor in determining the optimal division. The level of importance is determined by using a standardized scale from 0 to 1, where 0 means the insignificance of the factor, and 1 means the significance of the factor.

In the context of the above-mentioned clustering, Factor of Democracy Developments, Factor of Institutional Development, Human Development Indicator and Political Stability Indicator have achieved utmost importance. Socio-economic indicators are the least important, i.e. Poverty Headcount Ratio and Gini Index. All these indicators are mentioned above in the order of importance decrease.
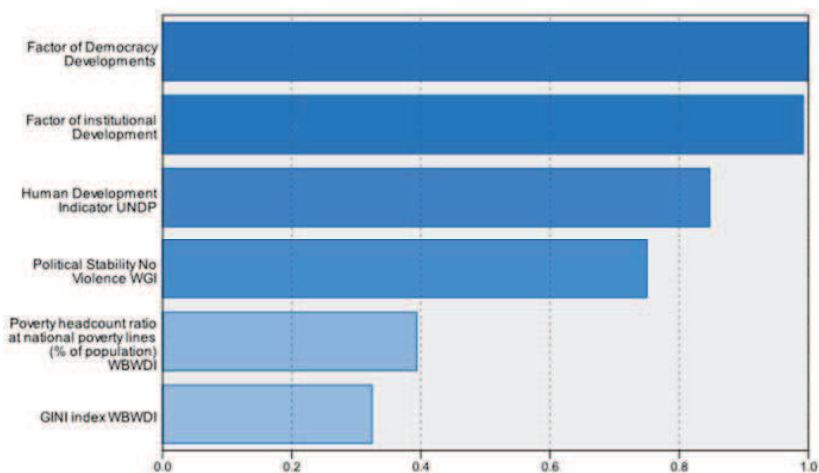
Figure 4. Importance of the factors used in the two-step cluster analysis method

The cluster analysis allows studying the comparative level of constitutionalism for a certain country. The following Table presents such an analysis for Armenia.

The Table allows each country to draw conclusions about what factors lie in the mean value in the cluster and therefore these factors are the indicators which should be particularly important for those responsible for developing policy in the field of constitutional regulation. Table 6 shows the values of indicators for Armenia, as well as the mean values of clusters with the mean and high level of constitutionalism.

In the cluster of countries with a mean level of constitutionalism, the indicator for Armenia is much lower than the mean of the given cluster for indicating democracy developments. Compared to the mean of the cluster with a high level of constitutionalism, the greatest difference occurs in the indicator of institutional development and the indicator of political stability. According to the two most important indicators determined by the cluster analysis, Armenia has lower than mean measurements. These are the indicators that should be paid special attention in the elaboration of the policy of priorities determined by means of a comparative cluster analysis.

Table4.Mean values of indicators in clusters

Indicators	Mean of the cluster with a mean level of constitutionalism	Mean of the cluster with a high level of constitutionalism	Armenia	Difference between the RA and the mean of the cluster with a mean level of constitutionalism%	Difference between the RA and the mean of the cluster with a high level of constitutionalism %
Political Stability No Violence WGI	-0.32953	0.725816	-0.30	11.10	-344.72
GINI index WBWDI	29.27273	30.869	31.48	7.01	1.94
Poverty Headcount Ratio at National Poverty Lines (% of population) WBWDI	22.48182	16.3	30	25.06	45.67
Human Development Indicator UNDP	0.731818	0.8404	0.733	0.16	-14.65
Index of Democracy Developments	0.466427	0.500168	-0.53401	-187.34	-193.66
Index of Institutional Development	-0.84033	0.991061	-0.0953	781.77	-1139.94

Thus, the cluster analysis allows determining the main indicators of the difference of the level of constitutionalism, as well as to project the impact of these indicators on a certain country.

In this case we have considered the example of Armenia.

According to the method described above, methods of discrete analysis are used at the next stage to determine the characters by which countries have the biggest differences within the cluster.

Countries in transition may be divided into three groups, i. e. countries with a low, mean and high level of constitutionalism. Cluster analysis allows determining the composition of these groups and of the most important characters for such a division. Within each cluster, most important characters that are for a certain cluster can be identified using

discrete analysis. In other words, cluster analysis makes it possible to identify the most important characters by which clusters differ from each other, and a discrete analysis makes it possible to identify the characters that have the greatest impact in the aspect of impact on countries within clusters.

The results of discrete analysis are shown in Annex 3. In the representative example, the discrete analysis showed that in countries with a low level of constitutionalism, the following characters (top-level graphs of Annex 3) are of the most importance (in the sense of belonging to a given cluster):

- ✓ Factor of Institutional Development
- ✓ Indicator of Political Stability
- ✓ Factor of Democracy Developments.

In countries with a mean level of constitutionalism, the most important is:

- ✓ Human Development Indicator.

In countries with a high level of constitutionalism, the important is:

- ✓ Factor of institutional Development.

For the countries in the second cluster, the most important is the character of human development. This means that within the second cluster, the differences between countries are primarily determined according to the level of human development. If the country "moves" from the second cluster to the third, most likely the differences within the cluster will be determined by the indicator of institutional development.

We can also consider the issue of changes in the above-mentioned arguments when changing the composition of the characters. Thus, it is possible to consider the scenarios by different sets of characters. In the lower-level graphs of Annex 3, some examples of this approach are given. The results of the calculations are presented in certain scenarios.

The study of such scenarios contains rich material in the aspect of measuring the level of constitutionalism, as well as quantitative and qualitative analysis of the factors conditioning its level. The solution of issues of identification and classification of the countries by a certain set of indicators and their comprehensive cause-and-effect analysis are the bases for the development of appropriate mechanisms for raising and

resolving main issues of administration of the process of constitutionalisation of the country.

As a result of discrete analysis, we also find out that in 2014, Turkmenistan is the most typical country for a cluster with a low level of constitutionalism, Bulgaria is the most typical country for a cluster with a mean level of constitutionalism, and Estonia is the most typical country for a cluster with a high level of constitutionalism.

5. Conclusions and Recommendations

1. In order to reveal the issues of constitutional diagnostic, monitoring and administration, as well as to provide satisfactory solutions, a conceptual scheme for determining the level of constitutionalism and its analysis was developed (see Figure 1), hereinafter the Methodology. This methodology is based on inter-complementary and interchangeable economic-mathematical methods and models.

2. The proposed methodology allows the implementation of constitutional diagnostics, by comparing the results obtained by various methods. The comparative analysis is carried out for some of countries. Approbation of the methodology was carried out for countries in transition as an example.

3. The main result of the applied methodology is the advancement of a multi-level method for measuring constitutionalism, which is based on correlation and comparison of a number of statistical methods. The significant advantage of the developed methodology is that it can be applied on the basis of different samples of country and in various variables.

4. The methodology presented in this paper was tested in 29 countries in transition . Below are the results obtained by the proposed methodology for the countries in transition based on the indicators of 2014. These results serve two purposes: firstly, they are of indicative nature, i.e. they show how important and different conclusions may be drawn by this methodology, and, secondly, they may serve as suggestions to developers of policy and those exercising the policy.

1. It is assumed that it is necessary to consider three groups of indicators to measure the level of constitutionalism, i.e. characteristics of

the rule of law state, characteristics of democractic developments and socio-economic indicators. The study of countries with economies in transition showed that the indicator of political stability should be also considered as an independent explanatory variable.

2.   Using factor analysis, two latent factors have been revealed, i.e. Factor of Institutional Development and Factor of Democracy Developments. Thus, numerous variables characterizing the level of legal, institutional and democracy developments of societies in countries with economies in transition may be described with the help of two latent factors.

3.   At the same time, it turned out that the socio-economic characteristics of the countries in transition may not be described effectively enough with the help of some latent factors. Therefore in the further analysis they act as separate indicators.

4.   The countries with economies in transition may be divided into three clusters according to the level of constitutionalism, i.e. a cluster with a low, mean and high level of integrated indicator of constitutionalism. It should be stated that the number of clusters and their composition may vary from year to year. The analysis of these changes is one of the most important components of constitutional diagnosis on the basis of comparative analysis.

5.   The cluster analysis allows determining the most important indicators that determine the level of constitutionalism. In the system of indicators of the countries as of 2014, the indicator of democratic developments and the indicator of institutional development were the most important ones. This fact indicates that at this stage of development, the main differences between the countries in transition are not due to socio-economic indicators. We came to similar conclusions in another study, where another set of explanatory variables had been used. This indicates the reliability of the results obtained with respect to the change in the set of explanatory variables.

The aim of improving socio-economic indicators is limited by the insufficient development of institutions and democratic processes. This conclusion is one of the most important results of this study from the viewpoint of recommendations for implementing policies aimed at improving the level of constitutionalism in the country. As a hypothesis, it can be assumed that the further economic growth in the countries in

transition, which can no longer be "restorative", should be largely predetermined by the improvement of the above-mentioned indicators(indicator of the level of democratization and institutional indicator).In the next decade, the tasks of overcoming the deficit of constitutionality will be of primary importance for the economic growth and development in the transition countries

6. The discrete analysis made it possible to find differences between countries within clusters. In particular, in a cluster with a low level of constitutionalism, the level of the indicator of democracy developments is the most important, the level of human development indicator is the most important in the mean cluster, and the level of institutional development is the most important in the third cluster.

7. The cluster analysis showed that from the viewpoint of inter-cluster division, Factor of Democracy Developments and Factor of Institutional Development are the most important. The discrete analysis showed that the same factors are important for the intra-cluster differences in countries. Meanwhile, in the countries with a low level of constitutionalism differences in democratic processes are in first place, and in countries with a high level of constitutionalism institutional differences are important.

The approbation of the methodology based on the set of integrated, factor, cluster and discrete analysis of diagnostics and monitoring of the level of constitutionality makes it possible to determine the scale of importance in the set of legal, democracy and socio-economic indicators. The obtained results indicate the priority of non-economic factors. They can serve as a basis for making effective managerial decisions, as well as promote raising the level of constitutionalism and social solidarity of society.

The transition from legal, democratic and socio-economic situation in the country to a qualitatively different situation with a higher indicator of constitutionalism has many geopolitical and local peculiarities from the perspective of transitology. The proposed methodology of diagnostics and monitoring of the level of constitutionalism allows to take into account also geopolitical and local peculiarities and to apply the developed tools for making managerial decisions.

Annex 1. Process of Creating the Database on the Measurement of Constitutionalism
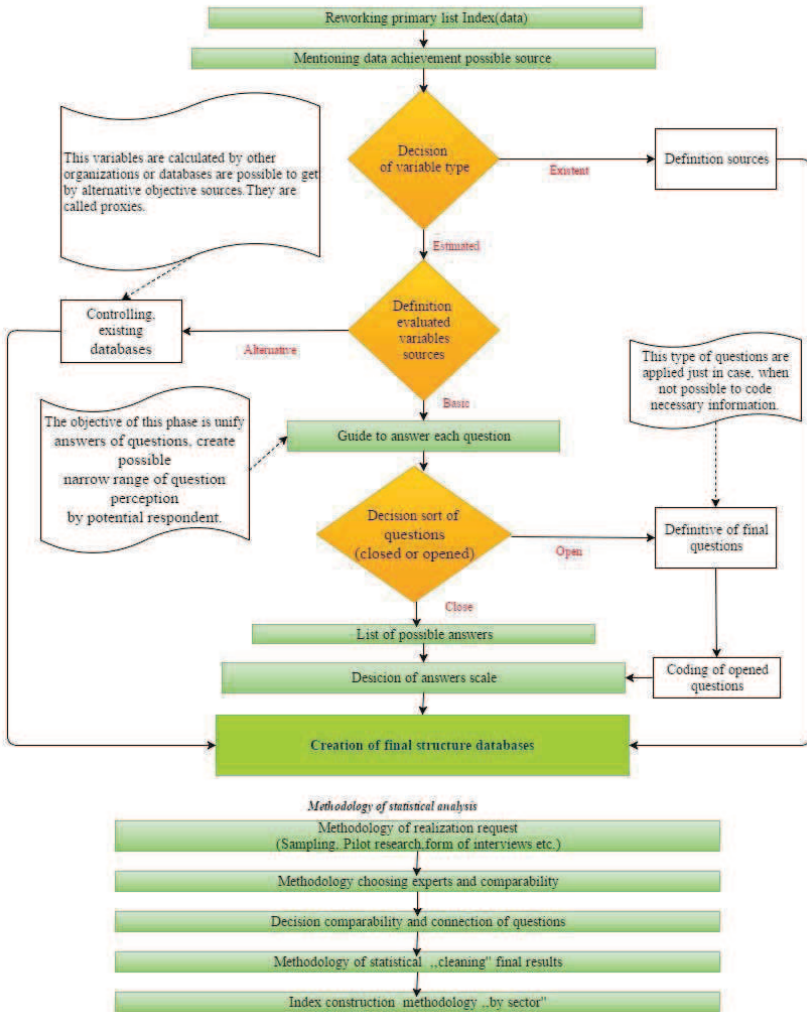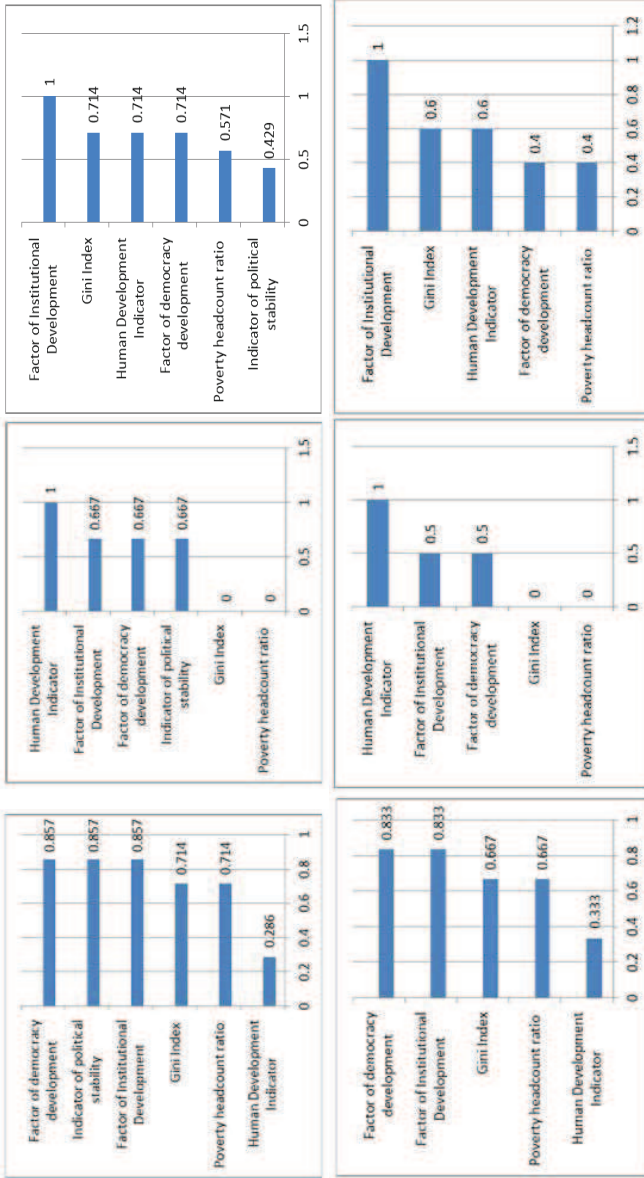
Annex 2. Correlation Matrix of Explanatory Variables

	Electoral Process FHNT	Civil Society FHNT	Independent Media FHNT	Government Effectiveness WGI	Political Stability No Violence WGI	Regulatory Quality WGI	Rule of Law WGI	Voice and Accountability WGI	Political Pluralism and Participation FHFW	Associational and Organizational Rights FHFW	Personal Autonomy and Individual Rights FHFW	GINI index WBWDI	Poverty headcount ratio at national poverty lines WBWDI	Property Right HI	Human Development Indicator UNDP
Electoral Process FHNT	1	0.957	0.946	-0.815	-0.653	-0.842	-0.885	-0.957	-0.958	-0.953	-0.926	0.144	-0.14	-0.812	-0.686
Civil Society FHNT	0.957	1	0.921	-0.753	-0.506	-0.849	-0.821	-0.969	-0.956	-0.967	-0.931	0.205	-0.225	-0.774	-0.623
Independent Media FHNT	0.946	0.921	1	-0.884	-0.629	-0.871	-0.924	-0.951	-0.916	-0.93	-0.896	0.116	-0.114	-0.88	-0.712
Government Effectiveness WGI	-0.815	-0.753	-0.884	1	0.739	0.872	0.953	0.847	0.791	0.821	0.854	-0.004	-0.072	0.891	0.871
Political Stability No Violence WGI	-0.653	-0.506	-0.629	0.739	1	0.598	0.75	0.59	0.656	0.584	0.59	-0.01	-0.033	0.654	0.656
Regulatory Quality WGI	-0.842	-0.849	-0.871	0.872	0.598	1	0.921	0.924	0.868	0.882	0.883	-0.058	0.152	0.861	0.715
Rule of Law WGI	-0.885	-0.821	-0.924	0.953	0.75	0.921	1	0.905	0.858	0.867	0.883	-0.069	0.046	0.941	0.818
Voice and Accountability WGI	-0.957	-0.969	-0.951	0.847	0.59	0.924	0.905	1	0.963	0.972	0.946	-0.212	0.158	0.855	0.71
Political Pluralism and Participation FHFW	-0.958	-0.956	-0.916	0.791	0.656	0.868	0.858	0.963	1	0.974	0.92	-0.18	0.196	0.792	0.65
Associational and Organizational Rights FHFW	-0.953	-0.967	-0.93	0.821	0.584	0.882	0.867	0.972	0.974	1	0.949	-0.181	0.189	0.81	0.669
Personal Autonomy and Individual Rights FHFW	-0.926	-0.931	-0.896	0.854	0.59	0.883	0.883	0.946	0.92	0.949	1	-0.191	0.027	0.843	0.763
GINI index WBWDI	0.144	0.205	0.116	-0.004	-0.01	-0.058	-0.069	-0.212	-0.18	-0.181	-0.191	1	0.112	-0.177	-0.15
Poverty headcount ratio at national poverty lines WBWDI	-0.14	-0.225	-0.114	-0.072	-0.033	0.152	0.046	0.158	0.196	0.189	0.027	0.112	1	0.019	-0.264
Property Right HI	-0.812	-0.774	-0.88	0.891	0.654	0.861	0.941	0.855	0.792	0.81	0.843	-0.177	0.019	1	0.775
Human Development Indicator UNDP	-0.686	-0.623	-0.712	0.871	0.656	0.715	0.818	0.71	0.65	0.669	0.763	-0.15	-0.264	0.775	1

Annex 3. Intracluster Analysis Using Discrete Analysis

Chart 1 (top left):
- Factor of Institutional Development: 1
- Gini Index: 0.714
- Human Development Indicator: 0.714
- Factor of democracy development: 0.714
- Poverty headcount ratio: 0.571
- Indicator of political stability: 0.429

Chart 2 (top right):
- Factor of Institutional Development: 1
- Gini Index: 0.6
- Human Development Indicator: 0.6
- Factor of democracy development: 0.4
- Poverty headcount ratio: 0.4

Chart 3 (middle left):
- Human Development Indicator: 1
- Factor of Institutional Development: 0.667
- Factor of democracy development: 0.667
- Indicator of political stability: 0.667
- Gini Index: 0
- Poverty headcount ratio: 0

Chart 4 (middle right):
- Human Development Indicator: 1
- Factor of Institutional Development: 0.5
- Factor of democracy development: 0.5
- Gini Index: 0
- Poverty headcount ratio: 0

Chart 5 (bottom left):
- Factor of democracy development: 0.857
- Indicator of political stability: 0.857
- Factor of Institutional Development: 0.857
- Gini Index: 0.714
- Poverty headcount ratio: 0.714
- Human Development Indicator: 0.286

Chart 6 (bottom right):
- Factor of democracy development: 0.833
- Factor of Institutional Development: 0.833
- Gini Index: 0.667
- Poverty headcount ratio: 0.667
- Human Development Indicator: 0.333

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