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Bayesian approach and demo ethical foundations for sustainability: Reassessing the role of democracy in achieving equitable social transformation and sustainable development goals

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Abstract: This article is devoted to studying the principles of the relationship between democracy and demo ethics as tools for transforming the sustainable development of society. The study is based on the assumption that the effective functioning of democracy is associated with such social phenomena as elections and electoral behavior. The study examined electoral behavior and surveyed members of society about the qualities of candidates to which they pay special attention. An analysis of qualitative and quantitative data demonstrating the democratic foundations of elections of members of society was conducted, and an analysis of the choice of voters in the extraordinary elections of the President of the Republic of Kazakhstan by region was conducted. In this study, Bayesian network modeling is experimentally applied to formalize the problem of identifying and analyzing the behavior of virtuous personality traits. A sociological survey of public opinion was conducted using the questionnaire method with the participation of 826 people from all regions of Kazakhstan from May to June 2023. A questionnaire was used to collect data, the main purpose of which was to compare attitudes and find out what values are considered important for people, what norms of behavior are considered acceptable, and to understand what values and norms prevail in society. It is concluded that the concept of demo ethics promotes a positive transformation of humanity and helps to form a new leader of virtue, a ruler of the city, capable of making ethical rational decisions that can ensure a balance between the economic, social, and environmental needs of humanity.

Keywords: democracy; sustainable development of society; demo ethics; ethical rational decisions; virtuous person; leader; social transformation; social capital; sustainable development goals (SDG); Bayesian networks method

1. Introduction

Democratic values and practices contribute to an understanding of democracy that is sensitive to the socio-political and cultural dimensions that define each nation's identity. The diversity of democratic systems emphasizes that the effectiveness of

public policies should be primarily judged by its population, which challenges the idea that some actors in international processes are in a position to make judgments about democratic status or ways of achieving it for other countries.

No single political system can claim global applicability because the richness and diversity of the cultural heritage of human civilization requires the embodiment of that diversity. The socio-political features of American, Chinese Russian, and other forms of democracy are consistent with their distinctive features. Similarly, Central Asian countries must maintain and develop democratic regimes that reflect their unique national contexts. Although there is no model political system that is universal and applicable to all countries in the world, democracy has been one of the common values of humankind for many centuries. Human civilization is rich and colorful, so the democracies of all countries have a diverse character of unique models of democracy that correspond to the national realities of states.

A strong civil society in the state is necessary for the functioning of democracy (Tocqueville, 2002). An active civic position and the presence of mechanisms for the participation of citizens in the life of society are among the important conditions for creating a favorable environment for economic progress and the development of innovation (Berger, 2003; Dlimbetova et al., 2023; Ma and Guo, 2023). In some studies, scholars have noted that democracy works better in places with higher levels of social capital (Fukuyama, 1996; Putnam, 1993). Universal trust facilitates cooperation among larger groups, allowing democracies to solve collective action problems voluntarily (Algan and Cahuc, 2014).

The development of social capital is related to the degree to which citizens are involved in associations based on their relationships, which involve mutual trust and common purpose, as well as relative equality, which contributes to democracy. Social capital allows people to achieve personal and collective goals based on utility maximization, which makes social capital an important personal resource (Coleman, 1991). The concepts of social, human, and intellectual types of capital are interrelated (Akpınar and Akdemir, 2000; Becker, 1964; Mincer and Polachek, 1995) if the concept of social capital includes a set of values, norms of behavior, trust, and connections between people that contribute to effective interaction and collaboration. cooperation, then human capital includes the knowledge, skills, education, and experience that people can use to solve personal and professional problems. Social capital is also associated with the properties of social organization, which R.D. Putnam includes trust, norms, and networks of relationships that can improve the effectiveness of society by promoting coordinated actions (Putnam, 1993). Based on this theory of social capital, we can come to the idea that social networks have value, and social contacts influence the performance of individuals and groups. We support this theory and note that digital technologies are becoming increasingly important for the professional and personal development of modern people (Kusumadani et al., 2023; Li et al., 2024; Tahat, 2023) since the development of skills in the digital world and the acquisition of competencies during the learning process allows people to work more effectively with information, manage electronic resources, communicate and create content in an online environment.

In the modern digital era, Internet communication tools play a decisive role in determining the significance of social connections, trust, and interaction in society,

and therefore in the formation and development of social capital. Thus, in the modern world, Internet communication methods influence human worldview (Camus et al., 2013; Mandal, 2016; Kirillova and Shlykova, 2022). Therefore, people need to develop critical thinking, skills in analyzing and evaluating information, as well as conscious use of media resources, for which media education is of great importance since it contributes to the development of digital literacy competencies and active participation in information exchange (Kirillova, 2021; Nicolaou et al., 2022; Tomyuk et al., 2022). This fact actualizes an integrated approach to personal development and collective productivity in the educational process through the use of digital resources and social networks (Al-Rahmi et al., 2023; Alshammari, 2023; Dahri et al., 2023; Gilyazova and Zamoshchansky, 2022) and pro-ecological education (Muñoz-García et al., 2022; Rahman et al., 2023; Uda and Basrowi, 2024; Vasconcelos and Paz, 2023).

The concept of social capital is interconnected with the idea of collective responsibility since it actualizes the concepts of interaction and trust in society (Bakeeva and Biricheva, 2021). It is the members of society who are responsible for their own and for the common good. The changing worldview of people in the modern world gives rise to collective discussions and criticism of the existing state of affairs (Kerimov, 2023; Loginov and Rudenkin, 2020; Putilova et al., 2023). However, the formation and development of social capital contributes to the development of social connections, trust, and interaction between people, which, in turn, contributes to a deeper understanding of collective responsibility for the common good.

It should also be noted that changing people's worldviews and the formation of a modern type of social capital depends on various ideological attitudes and ideas, among which social phenomena such as

- 1) migration plays a significant role since migrants can contribute to their values, culture, experience, and knowledge of society (Adugna, 2019; Liu et al., 2022; Shutaleva et al., 2022),
- 2) the idea of caring for the environment, emphasizing the importance of maintaining a balance in nature and minimizing the negative impact of humans on the environment, which determined the direction of recycling waste management (Brigida et al., 2024; Golik et al., 2023; Malyukova et al., 2023),
- 3) the philosophy of sustainable development and the ethic of caring for nature motivates people to adopt environmentally friendly habits in their daily lives and professional activities and make efforts to mitigate the effects of climate change (Borojević et al., 2023; Gomes and Lopes, 2023; Piscitelli and D'Uggento, 2022; Pena-Vega et al., 2022),
- 4) the development of digital technologies, finance, promoting environmental transformation in production (Ahmad and Van Looy, 2020; Li et al., 2024; Lehmann and Joseph, 2009; Restuputri et al., 2023; Thornton, 2010),
- 5) ideas of environmental consciousness contribute to the formation of environmental consciousness and an active position on nature conservation (Klyuev et al., 2023; Lin and Dong, 2023; Ha et al., 2023), as well as the direction of environmental education (Putilova et al., 2023; Shutaleva, 2023; UNESCO, 2015).

Thus, the philosophy of sustainable development allows considering various social phenomena in the context of a value approach in the relationship between man,

society, and nature, which contributes to the formation of an active life position of citizens, and therefore the development of a democratic society.

A key concern is that the Covid-19 pandemic has accelerated the decline of democracy. Data published by Freedom House (2020) show that democracy has been in recession for more than a decade, and the rate at which countries are losing civil and political rights has increased since the 2000s (Diamond, 2019). The challenges facing democracy are widely debated. In addition to being trapped by institutional arrangements that make problem-solving difficult (Fukuyama, 2014), political divisions, checks and balances, and special interest groups can cause gridlock (March and Olsen, 1984; Olsen, 1982) and thereby limit the ability of democratic governments to respond effectively to crises such as the COVID-19 pandemic.

The effectiveness of civil liberties requires the existence of real social rights that ensure that each person has at least the minimum resources necessary to concretely exercise the rights granted in the abstract. If we turn to the concept of social entropy, we must admit that any society without the guidance of authoritative individuals and institutions begins to disintegrate, and disorder in it increases. This theory also proves that the personification of a virtuous person and a virtuous leader is significant for scientific research. Ideas about the importance of leaders correlate with the broken windows theory (George Kelling and James Wilson), the essence of which is that minor offenses (examples: fare evasion, littering) increase entropy in society and stimulate the commission of more serious crimes (Inshakova, 2022).

According to the United Nations, democracy is a universally accepted ideal based on the common values of people around the world, regardless of cultural, political, and economic differences. As stated in the Vienna Declaration and Program of Action, democracy is based on the freely expressed will of the people to determine their own political, economic, social, and cultural systems and on their full participation in all aspects of their lives (United Nations, n.d.).

The model proposed today for the development and modernization of the political course is based on the principle “A fair state, economy, and society for everyone. Now and forever”. This model is based on the concepts of efficiency and fairness. Let us note that it is precisely in the context of global shifts and a general increase in conflict in world development that the issue of efficiency and justice becomes increasingly acute. The level of satisfaction of social demands for equality and justice is not sufficient and is not guaranteed by the availability of economic resources and high technologies.

Today, the need for a global understanding of justice is recognized. One of the most striking reasons for this need is the persistence of mass poverty and hunger. These phenomena give rise to demands for justice that are more than just the aggregate of individual claims to justice. The reason is the global nature of these problems, which overwhelmingly affect peoples and regions and often state governments cannot solve them. Global poverty and hunger should be understood as a component of the concept of “global interests”, which can contribute to the further solution of this problem.

In this matter, the idea of John Rawls is important that every person has an equal right to basic freedoms, every person should have the right to opportunities and equal chances with other people if they have similar abilities (Williams, 1993). John Rawls

takes the idea of a social contract to a higher level of abstraction when he argues that people are interested in increasing they are and decreasing the overall share of the benefits obtained from cooperation, therefore it is necessary to develop principles of social justice that would determine the rights and responsibilities of the main institutions of society and distribute shares of the benefits obtained as a result of cooperation, on a principle acceptable to all. The principles of justice are what people will accept as the governing principles when negotiating a social contract. It is they who will further determine rights and obligations, and the distribution of social benefits (Rawls, 2017).

The idea that justice reflects the level of social order that has minimal entropy (Iaremenko, 2016) is realizable; if the expectations of subjects carrying out institutional instructions do not coincide with socio-economic realities, then these realities are assessed as unfair, which, in turn, increases entropy processes in the economy. The manifestation of such entropy is a decrease in the likelihood of institutional behavior, an increase in the propensity for opportunistic practices, a decrease in trust, a rejection of specialization and cooperation, and a transition of the economic system to a lower level of equilibrium (Iaremenko, 2016).

In connection with current problems of the modern world, I. Kant's and G.V.F. Hegel's ideas of freedom are especially relevant; because they support the idea that people can live their lives as long as they do not infringe on the rights of others, and the idea that society's resources should be shared among all, including those who most deserve it (Mill, 1859).

One interesting example of building a just state is the idea of former Canadian Prime Minister Pierre Elliott Trudeau that a just society would be represented by a single, united Canada since all its citizens would actively participate in the life of a country that ensures equality between people and them, allowed to realize themselves in the way they consider the best justice for themselves, in other words, we can create the most humane and compassionate society (Trudeau, 1998).

In 2023 in the article "Demoethical Model of Sustainable Development of Society: A Roadmap towards Digital Transformation" (Zhanbayev et al., 2023) the need was justified by the basic principles of Demoethics, contributing to the formation of a worldview that ensures the sustainable development of the modern world. Today's world needs modern, virtuous leaders who can solve global problems and create a strong civil society of virtue. Members of this society must lead by example and contribute to the establishment of peaceful, just, and inclusive social structures to achieve the Sustainable Development Goals.

For us, the legacy of al-Farabi plays a huge role since his concept of a virtuous person (individual personality) as the highest wisdom is considered by us as key within the framework of the concept of demoethics. His idea of the dignity of a ruler as something determined by the presence of virtues, and not by the power of power, allows him to argue that a ruler can be someone who, by his example, can show people the path to achieving excellence and becoming an example of a virtuous person through his lifestyle.

Perfection in the concept of Abu Nasr Muhammad al-Farabi (next, Al-Farabi) was understood not as an ideal, which is often unattainable. The very concept of perfection is close to human existence, which is a constant incompleteness, but a

continuous transformation of the foundations of one's own life and thoughts: perfection does not consist in the fact that a person can do and know everything, but in comprehending everything all the time. Therefore, such relationships between the individual and society become possible in which the individual, achieving happiness, contributes to the improvement of the city in which he lives, the city, and the person's environment, in turn, should help the person achieve personal happiness. In modern refraction, the thoughts of ancient scientists are transformed by us into the postulate that an economically developed society, capable of withstanding the challenges of the time, is based on spiritual-moral and moral-political principles and values, that is, the principles and values of demo ethics.

The theoretical foundations of demo ethics are education, reason, knowledge, science, and honest work, which have been developed on principles and proposed by Al-Farabi, Abai Qunanbaiuly, and Yūsuf Balasaguni. It is they who ensure today in the methodology of demoethics the effective implementation of the best socially sustainable technologies available and modernization of the country's political course (Zhanbayev et al., 2023).

The United Nations has set the goal of promoting a new sustainable approach to the development strategy of society and its relationship with nature, caring for future generations, which led to the formation of sustainable development goals. Goal 16, on peace, justice, and strong institutions, aims to support harmonious and inclusive societies to promote sustainable development. This goal calls for guaranteeing access to the legal system for all people and creating effective, accountable, and inclusive institutions at all levels of society.

Today, societies around the world face challenges and opportunities towards sustainable development (Carrera, 2023; Han et al., 2024), addressing issues such as climate change (Hussain et al., 2024), environmental degradation (Patterson, 2024), inequality and injustice (Bowman et al., 2023; Millard and Fucci, 2023), outlined in Sustainable Development Goals (SDG) of the United Nations (UN) (Liu, 2023). This circumstance makes reference to the texts of Abu Nasr al-Farabi especially topical. Crimes such as murder, human trafficking, corruption, and organized crime, as well as violations of freedom of speech and discriminatory laws, hurt the development of all countries. In the modern world, there is a phenomenon of slavery. Domestic violence has a profound impact on the health, development, and well-being of family members, where children are the least protected in this situation. Many conflicts remain unresolved, and people do not receive protection or compensation.

One of the problems of our time is limited resources, especially sensitive for citizens is the limitation of water resources, which requires timely and large-scale transformations in the direction of sustainable development (Zhanbaev et al., 2022). The study of the problems of the connection between democracy and demo ethics as tools for transforming the sustainable development of society is one of the relevant, but not widely represented topics in the modern scientific community. This article aims to fill this gap. The study presents an analysis of the conceptual connection between democracy and the concept of demo ethics as a tool for transforming the sustainable development of society.

2. Materials and methods

During the study, electoral behavior was studied, and a survey was carried out among members of society about what qualities of candidates they pay great attention to. The study is based on a systems approach since the effective functioning of democracy is associated with such social phenomena as elections and voting behavior. This study involves the use of a socio-psychological approach since it allows considering the problems of values and the basis for decision-making in how a voter, when voting for a particular candidate, is guided by his internal motivational attitudes. People make decisions based on a system of their values, in which public consciousness is refracted, which is a fundamental factor influencing the formation of a civil and political position (Pushkareva, 2003). Based on this methodological approach, we analyzed qualitative and quantitative data demonstrating the democratic foundations of elections of members of society and an analysis of the choice of voters. This approach allowed analyzing the dynamics of the number of votes of candidates in the early elections of the President of the Republic of Kazakhstan by region.

In this study, Bayesian network modeling is experimented to formalize the task of identifying and analyzing the behavior of virtuous traits of individuals based on Bayesian networks modeling the virtuousness of individuals. At the same time, preliminary justifications are given for the new qualities of a modern virtuous leader based on sociological research data and a model of demo ethical values in order to transform democratic processes and sustainable development of society.

The Bayesian approach has become more relevant; it is implemented in the creation of Bayesian networks, which are a model (graphical) of the probability distribution between features that are related by a cause-and-effect relationship.

Probability allows predicting unknown results based on already known parameters and the formulation of the inverse problem itself is given to evaluate the unknown elements of the forecast, which is based on already known facts about the effectiveness of indicators.

Key achievements in the development of the apparatus of Bayesian trust networks are presented, supplemented by examples of the use of Bayesian networks. In addition, the challenges currently facing researchers in the field of Bayesian networks are listed.

The study is based on the application of a sociological approach. Such scientist as Paul Lazarsfeld, and other scientists applied the sociological approach to the study of elections in the 1940s–1950s and demonstrated the features of electoral behavior of groups of voters using behavioral methodology (Balashova, 2000). This approach identified the reasons that have a significant impact on the citizen's choices.

This approach implies the use of a sociological survey of public opinion. In the framework of this study, a sociological survey was conducted by questionnaire method with the participation of 826 people of different categories of students (students, masters, doctoral students) from all regions of Kazakhstan from May to June 2023. A questionnaire was used for data collection, the main purpose of which was to compare attitudes and to find out what values are considered important for people, what norms of behavior are considered acceptable and to understand what values and norms prevail in society.

3. Results and discussion

Based on the results of vote counting in the early elections of the President of the Republic of Kazakhstan, the Central Election Commission of the Republic of Kazakhstan provided statistical data, which are shown in **Tables 1** and **2** and from which it is clear that according to the results of voting on 20 November 2022, 8,300,046 people took part in the elections (CEC of the Republic of Kazakhstan, 2022). **Table 1** presents the regions of Kazakhstan and the share of voters who took part in the elections.

Table 1. Results of vote counting in the early elections of the president of the republic of Kazakhstan by region.

N	Regions of Kazakhstan	Share of participation voters
1	Abay region	80.18%
2	Akmola region	78.87%
3	Aktobe region	72.81%
4	Alma-Ata's region	72.10%
5	Atyrau region	70.87%
6	West-Kazakhstan region	68.67%
7	Jambyl Region	79.57%
8	Zhetisu region	81.42%
9	Karaganda region	78.39%
10	Kostanay region	79.28%
11	Kyzylorda Region	81.07%
12	Mangistau region	66.99%
13	Pavlodar region	77.58%
14	North-Kazakhstan region	79.01%
15	Turkestan region	80.37%
16	Ulytau region	75.48%
17	East Kazakhstan region	79.49%
18	Astana city	48.67%
19	Almaty city	28.72%
20	Shymkent city	59.79%

Source: CEC of the Republic of Kazakhstan, 2022.

Table 2. Number of candidates participating in the elections of the president of Kazakhstan.

N	Candidates for President of the Republic	Number of people who voted for the candidate	Share in percent
1	Abden K.Zh.	206,206	2.60%
2	Auesbaev N.S.	176,116	2.22%
3	Dayrabaev Zh.M.	271,641	3.42%
4	Kazhyken M.Z.	200,907	2.53%
5	Tokaev K.K.	6,456,392	81.31%
6	Tursynbekova S.P.	168,731	2.12%
7	Against all	460,484	5.80%

Source: CEC of the Republic of Kazakhstan, 2022.

Table 2 shows the candidates for President of the Republic of Kazakhstan, as well as the number of those who voted for them and the share of those who voted in the total number of those present at the elections.

In addition, the Central Election Commission notes that the voter lists for the unified national electoral district include 11,953,465 citizens, of which 8,300,046 people, 13,282 voted using absentee ballots and 112,969 voters voted outside the polling station. According to the data presented in **Table 2**, we see representatives of different political parties and public figures who took part in the elections for the President of the Republic of Kazakhstan and received the corresponding number of votes.

As a result of voting, candidates for the President of the Republic of Kazakhstan received the following number of votes:

- 1) Abden Karakat Zhaksylykkyzy (“National Alliance of Professional Social Workers”) received 206,206 votes or 2.60 percent of the votes cast;
- 2) Nurlan Satybaldievich Auesbaev (“National Social Democratic Party”) received 176,116 votes or 2.22 percent of the votes of voters who took part in the voting;
- 3) Dairabaev Zhiguli Moldakalykovich nominated (“People’s Democratic Patriotic Party “Auyl”) received 271,641 votes or 3.42 percent of the votes of voters who took part in the voting;
- 4) Kazhyken Meiram Zekeshuly (Republican Union of Trade Unions “Commonwealth of Trade Unions of Kazakhstan “Amanat”) received 200,907 votes or 2.53 percent of the votes of voters who took part in the voting;
- 5) Tokayev Kassym-Zhomart Kemelevich (“People’s Coalition of Political Parties and Public Associations”) received 6,456,392 votes or 81.31 percent of the votes of voters who took part in the voting;
- 6) Tursynbekova Saltanat Parkhatovna (Republican public association “Kazakh analary” dasturje zhol”) received 168,731 votes or 2.12 percent of the votes of voters who took part in the voting;
- 7) “Against all” was chosen by 460,484 votes or 5.80 percent of the votes of voters who took part in the voting.

Independent international experts noted that, in general, most candidates targeted their programs at a certain part of the electorate. Two presidential candidates proposed a new electoral system based on party lists and single-member constituencies. Most presidential candidates are characterized by attention to the social aspects of the lives of Kazakhstanis. The difference between the candidates from each other lies in the style of presenting the program: some candidates chose an official business style, while other candidates relied on a journalistic style. Both styles are positive because they are easy to present and understandable to voters.

What is noteworthy is not only the style and informativeness of the presentation of the candidates’ election programs but also the fact that each of the candidates for the post of President highlighted something different. For example, Karakat Abden emphasized in his program issues of family, society, the role of women in society and family, etc.

Saltanat Tursynbekova’s election program consists of five key points: 1) judicial reform and public security; 2) democratization of state institutions; 3) modernization of the political system; development of civil society; 4) strengthening the institution

of family, social protection of the population; 5) consolidation of sustainable legal mechanisms to support business and economic development.

Meiram Kazhyken will raise questions about the national wage system and propose raising the minimum wage (MW) to at least 150 thousand tenge, thereby bringing its size to the level of developed OECD (Organization for Economic Cooperation and Development) countries. Meiram Kazhyken also proposes to modernize the weapons of the Kazakh army and improve the systems of state defense procurement, mobilization, and training. During the televised debate, the candidate also spoke about the need to pay special attention to young people and improve the quality of education at all levels.

Nurlan Auesbaev proposed introducing maximum punishment for bribers, depriving them of the right to early release, creating a social support network, and exercising popular control over the distribution of budget funds. He also notes the need to introduce several innovations, for example, the abolition of the Senate and the presence in each locality of an open budget, which will reflect all movements of public funds online, in real-time.

Zhiguli Daraibaev put forward proposals for power to the people, the cult of the teaching profession, regional development, and the fight against corruption, while he relied on the agro-industrial complex, which in general could arouse interest among rural residents of the country employed in the agro-industrial complex.

Kassym-Jomart Kemeluly Tokayev proposed a new state policy based on three principles:

(1) A fair state (involves the continuation of political modernization and the introduction of professional public and corporate governance),

(2) A fair economy (building an economy based on a balance of interests and well-being of citizens, business, and the state, as well as the efficient use of the country's resources),

(3) A fair society (creation of a developed social infrastructure and ample opportunities for the realization of human potential).

Thus, each presidential candidate's program is interesting in its own way and attracts the attention of voters. As the voting results show, the majority of voters supported the election program of candidate Kassym-Jomart Kemelevich. As a politician, he also surpassed all potential competitors.

The results of the democratic choice of members of society do not sufficiently describe what qualities of candidates' voters paid much attention to, which determines the relevance of this study. During the study, we studied the preferences of members of society and also tried to understand what qualities of candidates' voters paid more attention to.

We believe that for the transformation of society and to ensure its sustainability, it is very important to know who in society personifies a virtuous person since it is they, their example, and their activities that contribute to the formation of the civic position of members of society and the level of their civic education. On this issue, we agree with the opinion of Barbolin and Kolesov (2009), who note that the national phenomenon can only be realized through the individual. At the same time, nation and personality are correlated as form and content. This process means that all the qualities

inherent in a nation must be formed in every individual belonging to that nation. Then the process of identification will be reduced to the individual’s realization of these properties in a specific social environment, in specific socio-economic conditions, that is, to self-awareness (Barbolin and Kolesov, 2009).

Currently, Bayesian networks, which are a development of the probabilistic approach based on the well-known Bayes theorem, are widely used to model subject areas. Bayesian networks (BN) are a model that reflects probabilistic and causal relationships between variables and allows for a description of the complete joint probability distribution (Russel, 2003).

We will call the elements of set “E” evidence and understand by them various signs of virtues (ethical rational decisions of leaders) and non-virtues (unethical rational decisions of leaders), i.e., random variables that have received meaning as a result of observing actions and decisions made that affect the sustainable development of society.

Virtue is a person who supports the Demo ethics value system such as “spirituality and morality,” “responsibility,” “justice,” “rationality” and “security” to create favorable conditions and improve the quality of life of the population. Moreover, it is a person who consciously accepts and transmits this value system, his behavior and decisions made follow this value system.

Non-virtue is a person who does not support the value system of Demo ethics such as “spirituality and morality”, “responsibility”, “justice”, “rationality” and “security”, as well as actions and decisions made contradict the principles and values of demo ethics and harm a sustainable system values, does not correspond to social norms, destroys the basis of social relations.

In the theory of Bayes network (BN) with the topologies presented in **Figure 1** are usually called “naive” BN. In a naive BN, all input vertices “E” are conditionally independent, provided that the target vertex H_i is fixed. Therefore, the naive BN has the following decomposition:

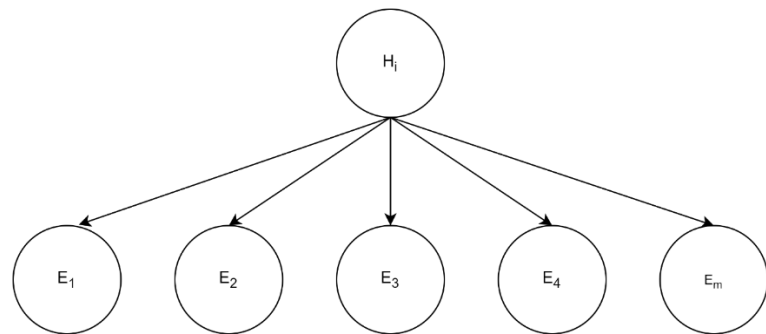


Figure 1. Bayes network: a graphical representation of virtue in the form of a set of evidence based on the values of Demo ethics such as “spirituality and morality” (“E1”), “responsibility” (“E2”), “justice” (“E3”), “rationality” (“E4”) and “security” (“E5m”).

$$P(e_1, \dots, e_m, H_i) = P(H_i)P(e_1|H_i)P(e_2|H_i) \dots P(e_m|H_i) \quad (1)$$

In a naive BN modeling the subject area under study, H_i is the vertex of the network, representing the probability that virtue, and e_1, e_j, \dots, e_m are the evidence taken into account when calculating this probability. An essential feature of the model is the direction of cause-and-effect relationships in the network: arrows leave the vertex H_i and enter the vertices E. Here the BN performs reverse logical inference it determines the probability of each state of the vertex H_i given the known states of the vertices E.

If the conditional probability $P(e_j|H_i)$ of the manifestation of evidence (sign) of non-virtue e_j is known, provided that state H_i , occurs, then Bayes' theorem determines the probability of state H_i :

$$P(H_i|e_j) = P(e_j|H_i)P(H_i)/P(e_j) \quad (2)$$

That is, uncertainty disclosure is carried out in the BN by calculating the posterior probabilities of the states of the vertices H based on evidence about the value of the vertices of the network E.

The objective task of identifying signs of non-virtue or corresponding signs in a mathematical formulation can be considered as a problem of binary classification (dichotomy), i.e., as the task of predicting a categorical dependent variable based on a sample of continuous and/or discrete variables (two or more pieces of evidence). In this problem, the dependent variable can only take two values (0 or 1).

Indeed, we will consider each employee s_i from the point of view of belonging to one of two disjoint sets: S^1 (the set of virtuous individuals) and S^2 (the set of non-virtuous individuals).

Here $S = S^1 \cup S^2$. Then the task of assessing the virtuous behavior of each leader ($\forall s_i$ leader) is to assign him to one of two classes (sets S^1 and S^2) and, accordingly, belonging to class S^1 means a virtuous leader, S^2 a non-virtuous leader.

Let us associate the concept of "virtue" with the network vertex (random discrete variable) H_i , which for ($\forall s_i$ leader) can be in one of two states: h_i (leader s_i virtue) or \bar{h}_i (leader non-virtue).

Since the vertex H_i has no parents, the probability values of its state are unconditional and independent (i.e., the a priori probabilities of its states are given).

We will assume that at the time of classification on the BN there are no grounds for verifying virtue, i.e., there is a standard situation of uncertainty, which in terms of probabilistic analysis is interpreted by equal a priori probabilities of these states, i.e., $P(h_i) = P(\bar{h}_i) = 0,5$.

From the point of view of the classical Bayesian approach, this means that a priori there are two equally probable hypotheses: h_i and \bar{h}_i .

These hypotheses are inconsistent and form a complete group of events H_i . Existing research by scientists defines the concept of "Virtue".

Thinkers such as Al-Farabi argue that a "virtuous society" is a community of people who have accurate knowledge about true happiness and how to achieve it and act on the basis of this knowledge, and Yūsusuf Balasaguni, revealing the content of his thoughts, reduces it to four benefactors: first Justice, second Happiness, third Reason, fourth – Unpretentiousness. It should be noted that ancient Greek philosophers also

identified four similar virtues: wisdom, courage, prudence, and justice. As is easy to see, Yūsuf Balasaguni puts “justice” in the most important first place among the four virtues. Al-Farabi wrote: “A virtuous city is a city in which the inhabitants help each other in achieving the most excellent things that are associated with the true existence of man, his existence, food and preservation of his life.” One of the main concepts related to the field of social and moral virtues is the concept of “hard work,” believes Abai Qunanbaiuly.

According to the writings of the great thinker al-Farabi, the dignity of a ruler is determined by the presence of virtues, and not by the power of power. The thinker is convinced that a ruler should, by his example, show the way to achieve perfection for people and be a person worthy of emulation by his way of life. Thus, possessing the qualities of a virtue depends on many factors.

If, as a result of calculations on the BN, the posterior probability of finding the vertex H_i in the state \bar{h}_i is, for example, equal to 0.8, this means that the person s_i belongs to the class $S^2(s_i \in S^2)$ with probability 0, 8. Let e_j , for example, be evidence such as bad habits, the presence of which reduces virtue (increases the possibility of a socio-economic threat).

Then this vertex can have two states: e_{j1} “presence of bad habits” and e_{j2} “absence of bad habits”.

If the conditional probabilities $P(e_{jr}|h_i)$, $r = 1 \dots 2$ are known, then the vertex e_j corresponds to a table of conditional probabilities and using Equation (2) the probabilities $P(h_i|e_{jr})$ can be calculated, which requires additional research and will be explored in our next study. To assign personality s_i to class S^2 (non-virtue) in the case when the state e_{jr} is known, an obvious rule is used:

$$\text{if } P(-\bar{h}_i|e_{j1}) > P(h_i|e_{j1}), \text{ to } s_i \ni S^2 \quad (3)$$

Consequently, to determine virtue, all the evidence that makes up the set E must be selected and given in **Table 3** conditional probabilities for each evidence.

To determine the probability of diagnoses using the Bayes method, it is necessary to create a diagnostic matrix (**Table 3**), which is compiled on the basis of the preliminary application of a qualitative and statistical method. This table provides a theoretical justification for the values of Demo ethics characteristic of virtues.

We believe that “Virtue” is a person who supports the Demo ethics value system such as “spirituality and morality,” “responsibility,” “justice,” “rationality” and “security” in creating favorable conditions and improving the quality of life of the population. For example, as a result of an experimental (preliminary test version) sociological study conducted using a questionnaire, the attitude of members of society to the process of forming a virtuous person, ruler, and city was studied.

Table 3. The paradigm of demo ethics values as a tool for sustainable implementation of the interaction between components of democracy.

N	Values Demoethicists	Characteristics of demoethics values
1	Spiritual morality	<p>When carrying out democratic reforms or creating and modernizing a political course on the principle of “A fair state, economy, and society for all,” the place and role of spirituality and morality are key factors that determine the priorities of modern society, making it possible to ensure the sustainability of its existence, initiate sociocultural modernization and further development.</p> <p>Spirituality shapes a person’s personality and is the highest moral center, focused on the essence, the very meaning of human existence. This circumstance determines the relevance of the problem of values “spirituality and morality” under study.</p> <p>Education of a spiritual and moral person.</p> <p>In the pedagogical dictionary, the concept of “spiritual education” is defined as the formation of a value-based attitude to life, ensuring sustainable and harmonious development of the individual,” that is, the cultivation of sensuality, duty, justice, sincerity, determination and other qualities that can give a higher meaning to actions. Spiritual and moral life is the life process and lifestyle characterized by moral qualities, which will become the basis for socialization and social identification of a person in a morally organized society (Yachina, 2015).</p> <p>At the same time, according to the results of a sociological study by Nadezhda Yachina, in which 130 students from different universities took part, the following results were obtained: the importance of material values was noted by 100% of students; Communication and cooperation with a person of high moral values and financial security are preferred by 100% of respondents. In addition, in a sociological study, students noted that the tools for the formation of a spiritual and moral personality, according to the study, students, are: religion 70%; freedom 100%; creativity 68%; tolerance 100% (Yachina, 2015).</p> <p>Thus, the construction of a spiritual and moral system occurs based on processes characteristic of the modern development of society. Moreover, national traditions are also the basis for the formation of this system. Traditions are capable of becoming spiritually enriched through the adoption of certain innovations that do not contradict, and sometimes completely correspond to their values and principles. This process can be considered as the emergence of new social connections and as a condition for the modernization of society.</p> <p>Democratic component</p> <p>The aspect of “spiritual morality” can influence behavior and decision-making in a democratic society in the following ways.</p> <p>When carrying out democratic reforms, spirituality, and morality, which underlie the nation’s way of life, become especially relevant. A nation is a social organism functioning in specific socio-economic and political conditions.</p> <p>Spiritual and moral values can serve as the basis for the development of laws that reflect the general moral norms of society (Nisnevich, 2013). For example, the prohibition of racism and discrimination is based on the universal spiritual and moral principles of equality and justice.</p> <p>Spiritual and moral values can also influence the decision-making process in politics. Citizens, based on their beliefs and values, can actively participate in political activities, express their positions, and make proposals that reflect their moral convictions. This results in decisions that are fairer and more in the public interest.</p> <p>Spiritual and moral values can also serve as the basis for ethical standards and approaches to business practices that promote responsible business behavior and reduce corruption. Thus, organizing a just civil society, state, and economy on global issues requires greater public participation in decision-making; the role of spirituality and morality are the main factors that determine the priorities of modern society and ensure the sustainability of social capital. and transformation.</p> <p>Example:</p> <p>In Germany, the Nazi regime, which rejected universal spiritual and moral values, led to violations of human rights and total control over society. After World War II, Germany included articles in its Constitution guaranteeing the protection and observance of universal spiritual and moral norms to ensure a stable and democratic society.</p>

Table 3. (Continued).

N	Values Demoethicists	Characteristics of demoethics values
2	Responsibility	<p>Fostering political responsibility and the political culture of a citizen (Almond and Verba, 1989; Usikova, 2010) as an integral part of his general culture should, it seems, be one of the most important tasks of modern education. The political responsibility of a citizen should be based on a clear awareness of the decisive role of politics in his everyday life. During elections, a politically responsible voter must make an informed decision about his participation or non-participation (as a form of protest) in certain elections, as well as about which party and candidate he will vote for. The political responsibility of citizens is an indicator of the level of not only their political but also their economic level, and general culture (Whelan, 2012; Hsieh, 2009; Scherer and Palazzo, 2007). The increasing responsibility of regional authorities will increasingly be influenced by civil society as the source of its formation, the level of development of which determines the responsible position of citizens in the electoral processes, and political and legal culture, which contribute to the further development of democracy and the strengthening of statehood. Responsibility remains the most important professional quality of a leader at any level and sphere of management, and first of all, political. In other words, responsibility and professionalism are closely related to each other.</p> <p>Education and adaptation to value demoethics as “responsibility”: Modern Kazakh schools, gymnasiums, colleges, and universities must form social values and skills for the further successful life of young people in society. Young people receiving a certificate, a diploma of maturity, must be ready to bear personal responsibility for their well-being and the well-being of society. To do this, he needs to acquire social skills and practical skills that ensure, on the one hand, his adaptation in a changing world, and on the other, social mobility, the ability to quickly change social and economic roles, which is impossible without high personal responsibility and a well-formed system of value orientations.</p> <p>Application and adherence to the value of demoethics as responsibility will ensure that decisions are made based on values and principles that provide ethical rationality, as a result, the interests of all members of society are taken into account. Interaction will be based on ethical rationality, which will ensure justice and equality of rights for all members of society. The ethical rational decision made by each virtuous leader reduces the likelihood of the emergence of shortcomings of the democratic process such as short-termism, corruption, voter ignorance, possible incompatibility with previous policies, lack of political education, manipulation or control of public opinion, and manipulation of the opposition.</p>

Table 3. (Continued).

N	Values Demoethicists	Characteristics of demoethics values
3	Justice	<p>Democratic component</p> <p>The principles of justice in a democracy include the protection of the rights and freedoms of citizens, equality before the law, respect for the rules of the game, and transparency in decision-making processes. Justice is seen as a social virtue. Following this virtue, people must create social structures to maintain the functioning of society and obey the law, which must be the same for everyone. Gulevich and Guseva (2023) notes that studies conducted in different countries have shown that people are guided by considerations of fairness when assessing business, legal, and political interactions. Studies conducted in the political sphere have demonstrated that the higher citizens assess the fairness of the actions of representatives of political power, the more positive they are towards the political system and the more often they agree with the decisions they make (Grimes, 2017; Tyler and Van der Toorn, 2013).</p> <p>People are more supportive of programs proposed by government officials if norms of procedural fairness are observed during their adoption (Rasinski and Tyler, 1988; Tyler and Caine, 1981; Tyler et al., 1985). For example, a study conducted in Sweden showed that the more fair people perceived the management of a state-owned railway company to be, the more they trusted them and the more they agreed with the decision to build the railway (Grimes, 2006).</p> <p>Thus, the world needs modern, virtuous leaders who can solve global problems and create a strong civil society of virtues (representatives of political authorities, representatives of state authorities, management of state-owned companies, and private companies).</p> <p>Application and observance of the value of demoethics as “fairness”</p> <p>We believe that demoethics governance can be considered a fairer form of democracy (or economic component), since it actively promotes the participation of the people in all aspects of public life, including the development of fair laws and their adoption to achieve ethical rationality.</p> <p>In a “just society”, urban problems such as housing and environmental pollution will be solved through the application of new knowledge and new technologies, respecting the values of Demoethics.</p> <p>A just society will be a society in which the properties of social organization are built on such demoethical values as spirituality and morality, responsibility, justice, rationality, and security, which increases the efficiency of economically successful social innovations that promote reasonable, sustainable development.</p> <p>In a “just state”, through virtuous leaders or virtuous political leaders of the nation, the political and personal freedom of the population/individual will be effectively ensured to create a strong civil society for the functioning of democracy, where the rights of minorities will be protected from the whims of the intolerant majority.</p> <p>To implement the “fair economy” development model, the main role of public policy must be aimed at maintaining a balance of interests and well-being of members of society, and business, and creating conditions for the reasonable use of regional assets/resources in economic activity, which should improve the quality of life of the population. A key indicator of the effectiveness of public administration is its impact on the quality of life of the population.</p> <p>For effective implementation and sustainable management of public policies (Zhanbayev, Yerkin et al., 2023), members of society have the qualities of demoethics, such as education, intelligence, knowledge, science, and honest work, which will be a prerequisite for creating a strong civil society, increasing the competitiveness of regions, and leading to an improvement in the population’s life quality.</p> <p>The main concept is the virtuous individual or member of society, which is formed through the following factors:</p> <p>education and upbringing refer to the holistic development of the individual through the development of the mind, the acquisition of knowledge, and the application of scientific principles;</p> <p>the integration of education and upbringing, a well-developed mind, the acquisition of knowledge, scientific principles, and honest work make a certain contribution to sustainable development;</p> <p>honest work plays a key role in identifying and embodying the values consistent with a virtuous person, a ruler, a city, and sustainable development.</p> <p>In modern society, the role of citizens is that of active participants in the innovation process. Based on demoethical values, it is possible to ensure economically successful social innovations that contribute to reasonable, sustainable economic development. Therefore, economic efficiency assumes that the needs of the individual are satisfied by using fewer resources.</p>

Table 3. (Continued).

N	Values Demoethicists	Characteristics of demoethics values
4	Rationality	<p>Rationality of thought and action is one of the main values that form the culture of modern society. It covers not only rational forms of consciousness, cognition, and knowledge but also human activity and behavior based on rational consciousness. In recent years, a growing body of work has suggested that the study of rationality can fruitfully build on the idea of embodied cognition in cognitive science (Petracca, 2021; Spellman and Schnall, 2009; Mastrogiorgio and Petracca, 2016; Gallagher, 2018; Viale, 2019; Gallese et al., 2021). Our work examines rationality in the context of democratic processes. According to international political experts, each nation creates power for itself according to its needs and beliefs. The ideal of civil society is considered to be a product of the moral self-improvement of people and not an abstract scheme imposed on any organic society. The civil formula of a nation lives, first of all, to preserve the individual and the opportunities for self-improvement.</p> <p>The development of the democratic process in the Western world, and the inclusion in it of people living in other regions of the globe, shows that the question of the relationship between rationality and democracy is still far from being resolved, either theoretically or practically. This is evidenced by serious contradictions that arise in modern society as a whole and its political sphere, in particular, as a result of the absolutization of individual forms of rationality to the detriment of its social dimensions. Today's attempts to recreate a truly democratic society through uncritical rationality focused on copying Western models of democracy, led to the destruction of not only trust in democrats but also faith in the democratic idea itself, its rationality, theoretical accuracy, and pragmatism.</p> <p>Practical politics often reduces its objectives exclusively to interests, assigning values a secondary role. This has a detrimental effect on the stability and continuity of the state's political course and, in general, represents a latent threat to the existing political order (Popov, 2015).</p> <p>This work substantiates the idea of rationality as a technology for the effectiveness of power, without which it is unthinkable to achieve either political or social goals. Therefore, the administrative prerogatives of power are formed based on a synthesis of interests, values, and rationality in such a way that values test the declared goals (namely, they are the final forms of interests), as well as rationality as a technology for achieving them in modern constitutional democratic societies.</p> <p>Rationality in politics and management consists of satisfying the social need for prudent, stable, and organized leadership, which can only be provided by the state and law; rationality makes politics predictable and pragmatic, and management effective and efficient; at the same time, naked rationality in politics is fraught with the threat of a disdainful attitude towards traditions, customs, and values in the life of peoples, and this contains the possibility of serious political mistakes (Popov, 2015; Daly, 1997). The need for rational management is actualized in conditions of conflict, uncertainty, and information deficiency, that is, where and when discrepancies arise with the established order in society, constitutional foundations, and adopted laws. In this kind of non-standard situation, it is rationality that is capable of defending the principle and the cause, confirming the reasonableness and viability of the existing political order.</p> <p>Thus, sustainable development of society can only be achieved by adhering to ethical rationalities that can ensure a balance between the economic, social, and environmental needs of humanity. It is ethical rationality that determines the emergence of the sustainable development paradigm, which is focused not only on economic growth but also on ensuring the basic needs of people, reducing socio-economic inequality, respecting cultural values, and increasing environmental responsibility (Danko, 2002). Moreover, demoethical rationality provides fundamental principles and processes for decision-making and behavior in a democratic society that are objective, open, and considerate of the views and interests of all citizens.</p>

Table 3. (Continued).

N	Values Demoethicists	Characteristics of demoethics values
5	Security	<p>Democratic security is a concept that emphasizes the capabilities of democratic procedures in the context of national security. The main goal is to create conditions for the stable development of the country. National security includes various aspects, internal and external. Security democracy seeks to provide security at the national level, taking into account the interests of the population and the governing elite. Security is defined as the state of protection of the individual, society, and state from external and internal threats: “security is the activity of people, society, the state, the world community of peoples to identify (study), prevent, weaken, eliminate (eliminate) and repel dangers and threats that can destroy them, deprive them of fundamental material and spiritual values, cause unacceptable (unacceptable objectively and subjectively) damage, the way for identification and development is closed” (Zhanbayev, Temirbaeva et al., 2022).</p> <p>Parents and teachers play an important role in developing information security skills in children. In modern society, where the Internet and digital technologies are increasingly widespread, it is important to teach children how to use information safely. Parents and teachers should be prepared for possible threats, teach children to protect themselves, and have ethics online.</p> <p>Application and adherence to the Values of Demoethics as Security will minimize risks and eliminate the following democratic problems: corruption, manipulation or control of public opinion, and instability of coalition governments. As a result, favorable conditions are provided for the sustainable development of society.</p> <p>The actions of virtuous leaders or virtuous political leaders of the nation, including the government, akimats, courts, prosecutor’s office, and police, will be aimed at solving the main priority tasks to ensure the well-being and security of citizens. In turn, every virtuous leader/manager ensures the security of the organization, which means protecting its human and intellectual potential, information, technology, capital, and profits. The economic security of the company is realized through the effective use of corporate resources to ensure the stable functioning of the organization. Moreover, citizens who have access to quality digital services need to improve the security of personal data while respecting the values of demoethics by introducing the best global standards for the collection, storage, and classification of personal data.</p> <p>The concept of the demoethical values strategy can be applied on a more global scale, in those directions that are more related to human security and sustainability, and is also a universal tool in adapting and applying internal and civil security policies in different regions, political cultures, priorities and values for achieving democratic, citizen-owned solutions to security and security issues arising from globalized threats.</p>

Note: Developed by the authors: Previously, this Concept of Demoethics was applied within the framework of the concept of demoeconomics to study the relationship of water resources with the values of “Demoethics” as a tool for the sustainable development of society. Tested and published in the journal Bulletin of the Karaganda University Economy series (Zhanbayev et al., 2024).

When answering the question “What virtuous people do you know in modern society?” The respondent could select up to three people who, in his opinion, possess the qualities of a virtuous person.

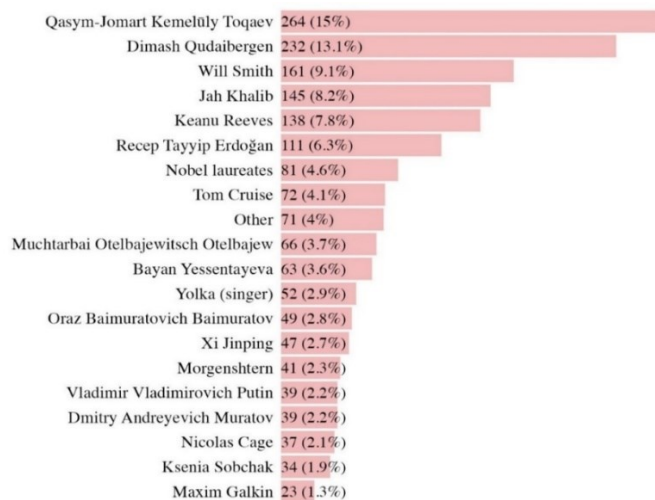


Figure 2. Preferences of modern society when choosing “virtuous people” on the example of Kazakhstan.

When analyzing the answers received from respondents in the Republic of Kazakhstan to the question posed, it was revealed that their total number of answers was 1765 with a total number of respondents of 826 people. That is, this result indicates that respondents chose more than one answer. So, one person was chosen by 276 respondents, two by 332, three by 155, and another number (more than three) by 63 respondents.

In accordance with **Figure 2**, Kassym-Jomart Tokayev received 264 responses out of 1765, that is, 15%.

Figure 1 shows the attitude of surveyed respondents to the idea of “virtuous people” in modern society using the example of the Republic of Kazakhstan. The importance of this question is that it shows the preferences of members of society towards a virtuous person in modern society.

Moreover, respondents were asked: “In modern society, what kind of virtuous people do you know?” In first place is the President of the Republic of Kazakhstan, followed by persons known throughout the world. We believe that the reason for choosing the head of state is determined, firstly, by the life position of both the individual and the existing leadership qualities, and secondly, by the people’s trust in the policies pursued by the leader of the state.

Using the example of respondents from Kazakhstan, the choice of the President lies in his versatile knowledge, multifaceted experience, great skill in diplomacy and politics, which allows him to be a worthy person, a worthy leader and correspond to the qualities of virtue. In addition, the modernization ongoing in the country proves the existence of a comprehensive renewal of the entire sphere of public life. The results are confirmed by the referendum held in Kazakhstan on 20 November 2022 and the early elections of the President of the Republic of Kazakhstan, which demonstrated universal support for the new initiatives of the President (CEC of the Republic of Kazakhstan, 2022), based on the development strategy, which was embedded in the statement from the President’s speech “The trust of the people is the highest value that It’s impossible to compare with anything.”

Based on what was described above, it should be noted that as reference points, an individual chooses a person who is often found in the information space and is distinguished by qualities close to the person. These are famous politicians, actors, athletes and, to a lesser extent, people around them.

This study examines and presents the results regarding the illumination of the above issues of the socio-ethical aspect of the sustainable development of society; deeper results of the study will be presented in our further empirical studies in stages, since the purpose of the study is to study the attitude of members of society to the process of formation of a virtuous person, ruler, city using the example of the Republic of Kazakhstan.

Figure 3 shows answers to the question “What qualities are characteristic of a virtuous person?” It is important to note an important characteristic of the responses. Respondents choose as important characteristics such qualitative indicators as kind (11.7%), well-mannered (10.4%), educated (8.8%), which may indicate a “spiritual” consideration of a virtuous person, and not his material basis.

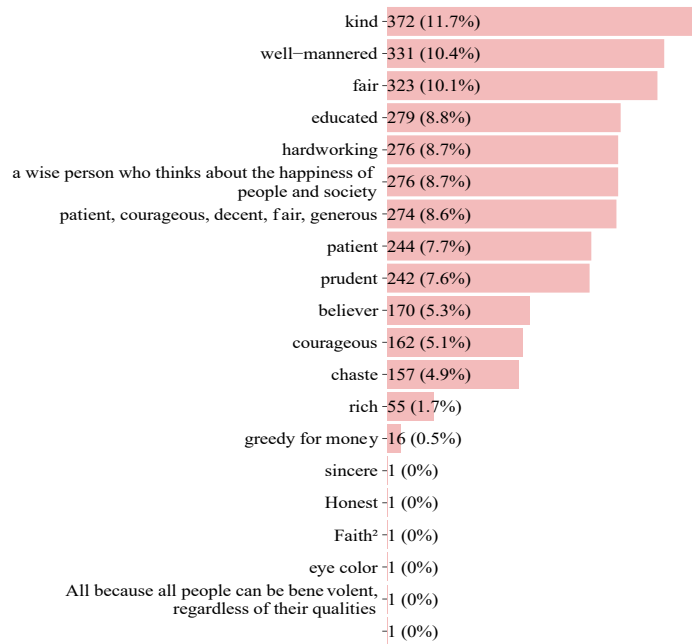


Figure 3. What qualities are characteristic of a virtuous person (Kazakhstan).

It should be noted that, from our point of view, the main goal of sustainable development is to achieve a balanced development of technological and ethical rationality in society, which will be aimed at increasing the economic and environmental competitiveness of a region or country and improving the quality of life of the population. Apparently, in the name of truth, we should discard extremes, take the positive from existing approaches, and, through their unique synthesis, identify possible contours of the future.

The approach of the concept of demo ethics values to the issue of the formation of a virtuous personality, a person as a ruler of the city through such concepts as “security”, “reasonableness”, “spirituality”, “responsibility”, “morality”, allows finding a balance between various human needs (economic, social and environmental), as well as to shape moral behavior in any life situation. Moreover, it is worth noting the need to prepare citizens for possible negative events and consequences present in the modern world, through the formation and development of such democratic qualities among the population as honest work, education, and knowledge. As a result, the synthesis of education, upbringing, a developed mind, acquired knowledge, scientific principles, and honest work will play a special role in the process of sustainable development, including in the issue of careful management of water resources (Zhanbayev et al., 2024).

We believe that in the long term, humanity needs to apply the concept of demo ethics to overcome social inequality and eliminate poverty, injustice, crime, war, and other social disasters. Because in the rapidly changing social environment of the modern world, science and technology are bringing unprecedented changes to people’s perceptions and their ability to solve problems.

This study analyzes the relationship between democracy and the new concept of demo ethics for further use as tools for sustainable development of society. Therefore, this study is of value to those who support the path to a just state, economy, and society.

Thus, the relationship between the values of demo ethics and the economic component of democracy deserves attention. Because they shape our vision of the world, behavior, decisions, and relationships with others. The use of this tool has several advantages in political management, the goal of which is the collective achievement of goals, if the goals and means of their implementation are harmonized by the values of demo ethics, this allows for avoiding unconstructive (impossible) goals and rigid political guidelines aimed at achieving the desired results by any means.

In democratic politics, value attitudes are interpreted in this study as the broadest possible ideas about the public good under the conditions of a given social system (Popov, 2015). Because values set the space for the spread of values such as spirituality and morality, responsibility, fairness, rationality, and security legitimize it; in this regard, the task of the highest bodies of state power is to consolidate in society through values, and not through coercion spirituality and morality, responsibility, justice, rationality, and security, to make values work for the benefit of society, promoting economic growth and positive transformation of humanity. As a result, the dissemination and application of democratic values can contribute to the creation of a more just and equal society and open up new opportunities for sustainable economic growth social innovation, and cohesion.

Experts note that interests come from values, while interests by themselves do not create value (Daly, 1997; Popov, 2015). The presence of value in a person's life gives it meaning, revives traditions and contributes to the positive transformation of humanity. The usefulness of values is determined by the fact that being an object of interest, the highest values arise that can cover the greatest number of interests, which allows the integration of society. In the absence of interest in values, values lose their practical significance. Interest in values is reflected by archetypes of social behavior at the macro level, which can be transmitted from generation to generation. Moreover, they are the meaning of forming the range of needs of the individual at the micro level. The relationship between the basic values of society and the political views of individuals is established by a hierarchical dependence, based on which they analyze and evaluate the objects of their political environment.

In today's modern economy, there are many shortcomings in the democratic process, among which we can highlight short-termism, corruption, voter ignorance, possible incompatibility with previous policies, lack of political education, manipulation or control of public opinion, and manipulation of the opposition. To influence these shortcomings in the democratic process to be reduced and eradicated we need modern virtuous leaders, new elites (representatives of political authorities, representatives of state authorities, management of state-owned companies and private companies), capable of solving global problems and creating a strong civil society of virtues. Members of this society must lead by example and contribute to the establishment of peaceful, just, and inclusive social structures to achieve the Sustainable Development Goals.

Thus, in the context of globalization and the rapid development of artificial intelligence (AI which is the first technology capable of operating autonomously, creating its own stories, and producing unique content, which poses a great danger to human dominance on Earth), a transformation of basic values, ideas, attitudes and principles of political democracy. A. Lincoln in "Democracy is the government of the

people, by the people and for the people” implemented this idea today’s modern economy needs modernization of the political course, which transforms social capital, and shapes and identifies virtuous people and new leaders.

Traditional democracy typically involves elections and representation of the people through parliament and government institutions. At that time, the concept of Demo ethics, deemphasized greater participation of citizens in decision-making processes and demands making decisions adhering to spirituality and morality, responsibility, justice, rationality, and security from every virtuous leader, democracy pays more attention to the institutional side of government.

The results of this study showed, that using the example of improving the democracy component in the context of a decision on choosing a candidate is necessary (developed and manifestation virtuous qualities of members of society and representatives of political authorities, representatives of state authorities, management of state-owned companies and private companies) the presence of a set of the following values of demo ethics:

- 1) spirituality and morality are the presence or formation of spiritual and moral qualities of an individual (or each member of society) is very important since when choosing a political candidate, his program contributes to the correct choice of a virtuous leader/political candidate of the party and making decisions that ensure the sustainability of social and moral social development,
- 2) responsibility is the level of responsibility of a virtuous leader/political candidate of a party to society or voters, how responsibly the goals of the program to improve the quality of life of the population will be fulfilled within the framework of the candidate/party’s program and its further implementation in real life,
- 3) justice is creating a moral climate in the process of interactions with society for ethical decisions that can provide a balance between the economic, social, and environmental needs of humanity, to the manifestation of moral behavior in any life situation, contributing to the improvement of the quality of life of the population and the competitiveness of society,
- 4) rationality ensures that decisions are made based on ethical rationality that takes into account the interests of all members of society,
- 5) security is minimizing risks and effectively eliminating the following democratic problems: corruption, manipulation or control of public opinion, instability of coalition governments, resulting in favorable conditions for the sustainable development of society.

Consequently, in today’s rapidly changing world, such choices and decisions made by every member of society have a positive and significant impact on the quality of life and competitiveness of the region, thereby achieving the SDGs in particular 16 (Peace, Justice and Strong Institutions), SDG 7 (access to clean and affordable energy), SDG 3 (healthy lives and well-being), SDG 11 related to ensuring the sustainability of cities and human settlements following the principles of inclusiveness and security) moreover, the creation and modernization of a political course according to the principle of “A fair state, economy, and society—for everyone. Now and Forever”.

To achieve the Sustainable Development Goals (SDG) maximize good governance and create a favorable investment climate for society and the business

community, virtuous leaders and city rulers are encouraged to apply the concept of demo ethics as a tool for social transformation with high-level social capital, which helps improve the quality of life of the population and lead to increased competitiveness of the region (Zhanbayev et al., 2022). This is a core element of achieving the SDG, which makes the transition to sustainable development possible state, economy, and society for everyone. Now and Forever.

Thus, we believe that the value of a political party is equal to the value of its virtuous leader/political candidate. Moral virtuous leader/political candidate, the moral standards that guide him in his professional activities and life, his attitude towards his work, towards each member of society, and colleagues—all this is of paramount importance for spiritual and moral development, as well as the development of other values of demo ethics such as responsibility, justice, rationality, and security.

4. Conclusions

In the modern economy, the restructuring or transformation of society is possible only by applying an ethical, rational method of decision-making that does not harm their health, morality, or education, does not reduce the profits of each member of society but, on the contrary, promotes the sustainable development of society.

It is ethical rationality that determines the emergence of the paradigm of sustainable development, which is focused not only on economic growth, but also on ensuring the basic needs of people, reducing socio-economic inequality, respect for cultural values, and increasing environmental responsibility (Ursul and Marushevsky, 2013).

Bayesian approach in modern analysis of processes and representations, including information expressed in prior values and justifying evidence confirming or refuting null hypotheses related to a limited object, resolution through the interdependent characteristics of controls, progressive prediction of the success of an event.

Thus, democracy is a political strategy and form of government, based on the components of demo ethics, allowing the population to confidently raise spiritual and moral children, receive a fair and high-quality education, engage in science responsibly, and ensure safe working conditions, earn money through honest work, allow to realize rational and useful ideas guided by reason that ensure the active participation of members of society in the processes of making good decisions, based on the idea that sustainable development of society can only be achieved by observing ethical rationalities that can strike a balance between the economic, social and environmental needs of humanity.

Demo ethics is a system of values for the interaction of society, which is based on an ethically rational method of making decisions that contribute to the sustainable development of society, allowing minimizing risks and eliminating the following democratic problems: political hegemony, corruption, manipulation, or control of public opinion, instability of coalition governments, etc.

Moreover, the approach concept demo ethics contributes to the positive transformation of humanity and helps the formation of a new leader of virtue, a ruler

of the city, capable of accepting ethical rational decisions that can provide a balance between the economic, social, and environmental needs of humanity, to the manifestation of moral behavior in any life situation, contributing to the improvement of the quality of life of the population and the competitiveness of society, which is conducive to democratic stability. Therefore, this study will contribute to several related works and also serve as a guide for future research in this area, generating interest for further research.

5. Declarations

Institutional Review Board Statement: Institutional Review Board Statement: This study followed the ethical principles of the Declaration of Helsinki in terms of confidentiality, anonymity, and use of information for research purposes only. This study includes the results of a sociological study. This article is not a clinical study, so it did not require additional ethical committees. This study followed the principles of voluntary participation, anonymity, and confidentiality when conducting the survey. The survey was conducted using Google Forms, the first question was the consent of the survey participants to participate in the survey. Only with a positive answer to this question respondents took part in the study and they became aware of the questions they had to answer. Following this obligation, each respondent was informed in advance upon receiving the questionnaires that the survey was conducted on the terms of confidentiality and anonymity.

Author contributions: Conceptualization, RAZ and DGM; methodology, RAZ, MI and DD; validation, WMAR, RA and AEM; formal analysis, GRT; investigation, RAZ; resources, RAZ; data curation, DGM and AEM; writing—original draft preparation, RAZ; writing—review and editing, RAZ, AVS and WMAR; visualization, DGM and RA; supervision, RAZ and MI; project administration, RAZ. All authors have read and agreed to the published version of the manuscript.

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Informed consent statement: The informed consent to participate was obtained from all the participants.

Data availability statement: The raw data supporting the conclusions of this article will be made available by the authors on request.

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References

- Aduagna, G. Migration patterns and emigrants' transnational activities: Comparative findings from two migrant origin areas in Ethiopia. *Comp. Migr. Stud.* 2019, 7, 5.
- Ahmad, T.; Van Looy, A. Business Process Management and Digital Innovations: A Systematic Literature Review. *Sustainability* 2020, 12, 6827. <https://doi.org/10.3390/su12176827>.
- Akpınar, T.; Akdemir, A. Intellectual capital. *First Int. Jt. Symp. Bus. Adm. Chall. Bus. Adm.* 2000, 82, 721–722.
- Algan, Y.; Cahuc, P. Trust, Growth, and Well-being: New Evidence and Policy Implications. *Handbook Econ. Growth* 2014, 2, 49–120.
- Almond, G.A.; Verba, S. *The Civic Culture. Political Attitudes and Democracy in Five Nations.* Sage Publications: London, UK, 1989.
- Al-Rahmi, W.M.; Al-Adwan, A.S.; Al-Maatouk, Q.; Othman, M.S.; Alsaud, A.R.; Almogren, A.S.; Al-Rahmi, A.M. Integrating Communication and Task–Technology Fit Theories: The Adoption of Digital Media in Learning. *Sustainability* 2023, 15, 8144. <https://doi.org/10.3390/su15108144>.
- Alshammari, A.F. Digital transformation, environmental protection, and technology competence: An integrated analysis of sustainability preferences. *Amazonia Investiga* 2023, 12(72), 145–158. <https://doi.org/10.34069/AI/2023.72.12.13>.
- Bakeeva, E.V.; Biricheva, E.V. "I" and collective responsibility. *Vestn. St. -Peterbg. Univ. Filos. I Konfl.* 2021, 37, 41–52.
- Balashova, A.N. Electoral Campaign Technology in Western Political Science. *Moscow University Bulletin. Series 12. Political Science* 2000, 2, 62–79.
- Barbolin, M.P.; Kolesov, V.I. The Spiritual and Moral Ideology of Education is the Genetic and Generating Core of Sustainable Human and Social Development in Modern Conditions of a Market Economy. *Vestnik of Kostroma State University* 2009, 15, 16–24. Available online: <https://elibrary.ru/item.asp?id=48967968> (accessed on 12 February 2024).
- Becker, G. *Human Capital*; Columbia University Press: New York, NY, USA, 1964.
- Berger, A.N. The Economic Effects of Technological Progress: Evidence from the Banking Industry. *Journal of Money, Credit, and Banking* 2003, 35(2), 141–176. <https://doi.org/10.1353/mcb.2003.0009>.
- Borojević, T.; Petrović, N.; Radaković, J.A.; Glomazić, H.; Radojičić, M.; Milenković, N.; Maletič, D.; Maletič, M. Youth Participation for Sustainable Value Creation: The Role and Prioritization of SDGs. *Sustainability* 2023, 15, 16456. <https://doi.org/10.3390/su152316456>.
- Bowman, B.M.; Abbott-Donnelly, I.; Barsoum, J-F.; Williams, P.; Hunt, D.V.L.; Rogers, C.D.F. The Water Pivot: Transforming Unsustainable Consumption to Valuing Water as a Resource for Life. *Front. Sustain. Cities* 2023, 4, 1177574. <https://doi.org/10.3389/frsus.2023.1177574>.
- Brigida, V.; Golik, V.I.; Voitovich, E.V.; Kukartsev, V.V.; Gozbenko, V.E.; Konyukhov, V.Y.; Oparina, T.A. Technogenic Reservoirs Resources of Mine Methane When Implementing the Circular Waste Management Concept. *Resources* 2024, 13, 33. <https://doi.org/10.3390/resources13020033>.
- Camus, A.; Paneva-Marinova, D.; Luchev, D. Digital Humanities: Challenges of the Transformation of Tools and Objects of Knowledge in Contemporary Humanities. *Digital Presentation and Preservation of Cultural and Scientific Heritage* 2013, 3, 109–118. <https://doi.org/10.55630/dipp.2013.3.11>.
- Carrera, L. Active aging and urban policies: the space as an instrument for an inclusive and sustainable city. *Front. Sociol.* 2023, 8:1257926. <https://doi.org/10.3389/fsoc.2023.1257926>.
- CEC of the Republic of Kazakhstan. The results of the early elections of the President of the Republic of Kazakhstan according to the data of the Central Election Commission of the Republic of Kazakhstan, 2022. Available online: <https://www.election.gov.kz/rus/news/releases/index.php?ID=8012> (accessed on 21 November 2023).
- Coleman, J. S. *Grundlagen der Sozialtheorie. Bd. 1.* Oldenburg: München, Germany, 1991.
- Dahri, N.A.; Al-Rahmi, W.M.; Almogren, A.S.; Yahaya, N.; Vighio, M.S.; Al-maatuok, Q.; Al-Rahmi, A.M.; Al-Adwan, A.S. Acceptance of Mobile Learning Technology by Teachers: Influencing Mobile Self-Efficacy and 21st-Century Skills-Based Training. *Sustainability* 2023, 15, 8514. <https://doi.org/10.3390/su15118514>.
- Daly, H. *Beyond Growth: The Economics of Sustainable Development.* Boston: Beacon Press, 1997. 264 p.
- Danko, A.V. Security of the state, society and the individual. In *Collection of scientific papers of the Department of Management and Informatics*; MFA Russia: Moscow, Russia, 2002; pp. 80.

- Diamond, L. *Ill winds: saving democracy from Russian rage*. Chinese Ambit. Am. Complacency. Penguin Press: New York, USA, 2019.
- Dlimbetova, G.; Kurmanbayev, R.; Akimish, D.; Toktaganova, G.; Zharmenova, B. The effectiveness of socio-economic mechanisms in environmental education of young people in Kazakhstan. *Economic Annals-XXI* 2023, 203(5-6), 59–69. <https://doi.org/10.21003/ea.V203-07>.
- Freedom House. *Countries and Territories*. 2020. Available online: <https://freedomhouse.org/countries/freedom-world/scores> (accessed on 10 March 2024)
- Fukuyama, F. *Political Order and Political Decay: From the Industrial Revolution to the Globalization of Democracy*. Profile Books: Macmillan, 2014.
- Fukuyama, F. *Trust: Human Nature and the Reconstitution of Social Order*. Free Press, 1996.
- Gallagher, S. Embodied rationality. In *The Mystery of Rationality*. Bronner, G, Di Iorio, F., Eds; Springer: Cham, 2018; pp. 83–94. https://doi.org/10.1007/978-3-319-94028-1_7.
- Gallese, V.; Mastrogiorgio, A.; Petracca, E.; Viale, R. Embodied bounded rationality. In *Palgrave Handbook of Bounded Rationality*; R. Viale, R.; Eds; Routledge: London, UK, 2021; pp. 377–390. Available online: <https://hdl.handle.net/11381/2904786> (accessed on 14 February 2024).
- Gilyazova, O.S.; Zamoshchansky, I.I. Specific features of universal competences of higher education in Russia in the context of competence-based education: conceptual analysis. *Perspektivy nauki i obrazovania – Perspectives of Science and Education* 2022, 56 (2), 77-94. <https://doi.org/10.32744/pse.2022.2.5>.
- Golik, V.I.; Klyuev, R.V.; Martyushev, N.V.; Kondratiev, V.V.; Tynchenko, V.S.; Gladkikh, V.A.; Iushkova, L.V.; Brigida, V. Reuse and Mechanochemical Processing of Ore Dressing Tailings Used for Extracting Pb and Zn. *Materials* 2023, 16, 7004. <https://doi.org/10.3390/ma16217004>.
- Gomes, S.; Lopes, J.M. Unlocking the potential of circular consumption: The influence of circular habits, environmental concerns and the search for pro-sustainable information on circular consumption. *Business Strategy & Development* 2023, 7, 1–16. <https://doi.org/10.1002/bsd2.327>.
- Grimes, M. Organizing consent: The Role of Procedural Fairness in Political Trust and Compliance. *European Journal of Political Research* 2006, 45, 285–315. <https://doi.org/10.1111/j.1475-6765.2006.00299.x>.
- Grimes, M. Procedural fairness and political trust. In *Handbook on political trust*; Zmerli, S., Van der Meer, T.W.G., Eds; Edward Elgar Publishing: Cheltenham, UK, 2017; pp. 256–269.
- Gulevich, O.; Guseva, B. A Methodology to Measure Procedural Justice in the Political Sphere. *PS* 2023, 16, 6. <https://doi.org/10.54359/ps.v16i91.1457>.
- Ha, J.W.; Jeon, E.C.; Park, S.K. Status of environmental awareness and participation in Seoul, Korea and factors that motivate a green lifestyle to mitigate climate change. *Current Research in Environmental Sustainability* 2023, 5, 100211. <https://doi.org/10.1016/j.crsust.2023.100211>.
- Han, J.; Song, Y.; Chen, J. Reducing the “digital divide” to reap the “digital dividend”: spatial differences and convergence of the digital economy in cities of China. *Front. Sustain. Cities* 2024, 6, 1283604. <https://doi.org/10.3389/frsc.2024.1283604>.
- Hsieh, N.-H. Does global business have a responsibility to promote just institutions? *Business Ethics Quarterly* 2009, 19(2), 251–73. doi:10.5840/beq200919213.
- Hussain, S.; Hussain, E.; Saxena, P.; Sharma, A.; Thathola, P.; Sonwani, S. Navigating the Impact of Climate Change in India: a Perspective on Climate Action (SDG13) and Sustainable Cities and Communities (SDG11). *Front. Sustain. Cities* 2024, 5, 1308684. <https://doi.org/10.3389/frsc.2023.1308684>.
- Iarenenko, O. Contradictory Unity of Economic Efficiency and Social Justice as a Factor For Economic System Functioning and Evolution. *Ekonomicheskaya teoriya = Economic Theory* 2016, 14, 19–32. Available online: 32. <https://europub.co.uk/articles/-A-429807> (accessed on 14 June 2023).
- Inshakova, N. The Perfection of Chaos: What is Entropy and How to Live in Complete Uncertainty. *Forbes* 2022. Available online: <https://www.forbes.ru/forbeslife/482498-bezuprecnost-haosa-cto-takoe-entropia-i-kak-zit-v-polnoj-neopredelennosti> (accessed on 14 December 2023).
- Kerimov, T. The persistence of critique and the impasses of postcritique. *Filosofiya. Zhurnal Vyshey Shkoly Ekonomiki* 2023, 7(2), 60-85. <https://doi.org/10.17323/2587-8719-2023-2-60-85>
- Kirillova, N.B.; Shlykova, O.V. Modifying the humanities: global challenges of the digital revolution. *Perspektivy nauki i obrazovania – Perspectives of Science and Education* 2022, 59 (5), 10–23. <https://doi.org/10.32744/pse.2022.5.1>.

- Kirillova, N.B. New concepts of media science in the sociocultural system of the information civilization. *Perspektivy nauki i obrazovaniya – Perspectives of Science and Education* 2021, 54(6), 10–22. <https://doi.org/10.32744/pse.2021.6.1>.
- Klyuev, R.V.; Brigida, V.S.; Lobkov, K.Y.; Stupina, A.A.; Tynchenko, V.V. On the issue of monitoring crack formation in natural-technical systems during earth surface displacements. *MIAB. Mining Informational and Analytical Bulletin* 2023, 11(1), 292-304. https://doi.org/10.25018/0236_1493_2023_111_0_292
- Kusumadani, A.I.; Rahardjo, S.B.; Yamtinah, S.; Prayitno, B.A. Development of High-Order Thinking Skills (HOTS) Instruments with a Socio-Scientific Problem-Based Learning Approach on the Subject of Viruses. *Eurasian Journal of Educational Research* 2023, 107, pp.140–164. <https://doi.org/10.14689/ejer.2023.107.009>
- Lehmann, J.; Joseph, S.M. (Eds.). *Biochar for Environmental Management: Science and Technology* (1st ed.). London, Routledge. 2009. <https://doi.org/10.4324/9781849770552>.
- Li, M.; Jiang, S.; Jotikasthira, N. Developing A Conceptual Framework for Sustainable Development Education Through Digital Tools: Qualitative Insights from Southwest China. *Journal of Curriculum and Teaching* 2024, 13(1), 119–138. <https://doi.org/10.5430/jct.v13n1p119>.
- Li, W.; Cai, J.; Zhu, Y. et al. Can digital finance development drive green transformation in manufacturing? Evidence from China. *Environ Sci Pollut Res* 2024, 31, 23876–23895. <https://doi.org/10.1007/s11356-024-32402-1>.
- Lin, C.-C.; Dong, C.-M. Exploring Consumers' Purchase Intention on Energy-Efficient Home Appliances: Integrating the Theory of Planned Behavior, Perceived Value Theory, and Environmental Awareness. *Energies* 2023, 16, 2669. <https://doi.org/10.3390/en16062669>.
- Liu, H-Y. Editorial: Citizen engagement and innovative approaches in sustainable urban transitions. *Front. Sustain. Cities* 2023, 5, 1341568. <https://doi.org/10.3389/frsc.2023.1341568>.
- Liu, T.; Han, G.; Nie, W. Optimal Residence: Does Air Quality Affect Settlement Decisions of Urban Floating Migrants? *Sustainability* 2022, 14, 8042. <https://doi.org/10.3390/su14138042>.
- Loginov, A.V.; Rudenkin, D.V. Neither conflict, no concord: Performing ideology in contemporary Russia. *Vestnik Sankt-Peterburgskogo Universiteta, Filosofii i Konfliktologii* 2020, 36(2), 341–355. <https://doi.org/10.21638/spbu17.2020.211>.
- Ma, Z.; Guo, Y. Leveraging Intangible Cultural Heritage Resources for Advancing China's Knowledge-Based Economy. *Journal of the knowledge economy* 2023. <https://doi.org/10.1007/s13132-023-01643-9>.
- Malyukova, L.S.; Martyushev, N.V.; Tynchenko, V.V.; Kondratiev, V.V.; Bukhtoyarov, V.V.; Konyukhov, V.Y.; Bashmur, K.A.; Panfilova, T.A.; Brigida, V. Circular Mining Wastes Management for Sustainable Production of *Camellia sinensis* (L.) O. Kuntze. *Sustainability* 2023, 15, 11671. <https://doi.org/10.3390/su151511671>.
- Mandal, A. *Digital Humanities. The Year's Work in Critical and Cultural Theory* 2016, 24(1), 317–342. <https://doi.org/10.1093/ywct/mbw015>.
- March, J.; Olsen, J.P. The new institutionalism: organizational factors in political life. *Am. Polit. Sci. Rev.* 1984, 78, 734–749.
- Mastrogiorgio, A.; Petracca, E. Embodying rationality. In *Model-Based Reasoning in Science and Technology*; Magnani, L., Casadio, C., Eds; Springer: Cham, 2016; pp. 219–237. https://doi.org/10.1007/978-3-319-38983-7_12.
- Mill, J.S. *On liberty*. London: John Parker, 1859.
- Millard, J.; Fucci, V. The role of social innovation in tackling global poverty and vulnerability. *Front. Sociol.* 2023, 8, 966918. <https://doi.org/10.3389/fsoc.2023.966918>.
- Mincer, J.; Polachek, S. Family investments in human capital: Earnings of women. In *Gender and Economics*; Jane, H., Ed.; Edward Elgar: Aldershot, UK, 1995; pp. 317–349.
- Muñoz-García, I.M.; Alcántara-Manzanares, J.; Medina Quintana, S. Key Aspects of Adolescents' Environmental Attitudes with a View to Transformative Education. *Education Sciences* 2022, 12(9), 591. <https://doi.org/10.3390/educsci12090591>.
- Nicolaou, C.; Masiola, M.; Kalliris, G. The Challenge of an Interactive Audiovisual-Supported Lesson Plan: Information and Communications Technologies (ICTs) in Adult Education. *Education Sciences* 2022, 12(11), 836. <https://doi.org/10.3390/educsci12110836>.
- Nisnevich, Yu.A. About actors of political responsibility. *Problem analysis and public management design* 2013, 6(3), 82–87.
- Olsen, M. *The rise and decline of nations: Economic growth, stagflation, and social rigidities*. Yale University Press, 1982.
- Patterson, J. *Into the Wild: Uncertain Frontiers and Sustainable Human–Nature Interactions*. *Front. Sociol.* 2024, 9, 1325963. <https://doi.org/10.3389/fsoc.2024.1325963>.

- Pena-Vega, A.; Cohen, M.; Flores, L.M.; Le Treut, H.; Lagos, M.; Castilla, J.C.; Gaxiola, A.; Marquet, P. Young People Are Changing Their Socio-Ecological Reality to Face Climate Change: Contrasting Transformative Youth Commitment with Division and Inertia of Governments. *Sustainability* 2022, 14, 15116. <https://doi.org/10.3390/su142215116>.
- Petracca, E. Embodying Bounded Rationality: From Embodied Bounded Rationality to Embodied Rationality. *Front. Psychol.* 2021, 12, 710607. <https://doi.org/10.3389/fpsyg.2021.710607>.
- Piscitelli, A.; D'Uggento, A.M. Do young people really engage in sustainable behaviors in their lifestyles?. *Social Indicators Research* 2022, 163, 1467–1485. <https://doi.org/10.1007/s11205-022-02955-0>.
- Popov, A.V. Politics and strategy. *Bulletin of Moscow University. 12: Political Science.* 2015, 4, 91–98.
- Pushkareva, G.V. The study of electoral behavior: the contours of the cognitive model. *Polis. Political Studies* 2003, 3, 120–130. <https://doi.org/10.17976/jpps/2003.03.12>.
- Putilova, E.; Tsiplakova, Y.; Diachkova, A.; Knysh, E. Environmental education and its principles. *E3S Web of Conferences* 2023, 431, 09003. <https://doi.org/10.1051/e3sconf/202343109003>.
- Putilova, E.; Tsiplakova, Y.; Pyrina, M. Network user behavior and media risks in modern education. *E3S Web of Conferences* 2023, 431, 05004. <https://doi.org/10.1051/e3sconf/202343105004>.
- Putnam, R.D. *Making Democracy Work: Civic Traditions in Modern Italy.* Princeton University Press: New Jersey, USA, 1993.
- Rahman, H.A.; Dahalan, D.; Bakar, A.S.A. Effects of an Environmental Education Intervention on Environmental Sustainability Among Youth in Malaysia. *Jurnal Ilmiah Peuradeun* 2023, 11(3), 873-886. <https://doi.org/10.26811/peuradeun.v11i3.1036>.
- Rasinski, K.A.; Tyler, T.R. Fairness and vote choice in the 1984 presidential election. *American Politics Quarterly* 1988, 16, 5–24. <https://doi.org/10.1177/1532673X8801600101>.
- Rawls, J. *A Theory of Justice.* URSS: LENAND: Moscow, Russia, 2017.
- Restuputri, D. P.; Amalia, F.; Masudin, I.; Widayat, W. The influence of industry 4.0, internet of things, and physical-cyber systems on human factors: a case study of workers in Indonesian oil and gas refineries. *Theoretical Issues in Ergonomics Science* 2023, 1–26. <https://doi.org/10.1080/1463922X.2023.2284295>.
- Russel, S.J.; Noving, P. *Artificial Intelligence: A Modern Approach.* Prentice Hall: New Jersey, USA, 2003.
- Scherer, A.G.; Palazzo, G. Toward a political conception of corporate social responsibility: Business and society seen from a Habermasian perspective. *Academy of Management Review* 2007, 32(4), 1096–1120. <https://doi.org/10.5465/amr.2007.26585837>.
- Shutaleva, A. Ecological Culture and Critical Thinking: Building of a Sustainable Future. *Sustainability* 2023, 15, 13492. <https://doi.org/10.3390/su151813492>.
- Shutaleva, A.; Martyushev, N.; Starostin, A.; Salgiriev, A.; Vlasova, O.; Grinek, A.; Nikonova, Z.; Savchenko, I. Migration Potential of Students and Development of Human Capital. *Educ. Sci.* 2022, 12, 324. <https://doi.org/10.3390/educsci12050324>.
- Spellman, B.A.; Schnall, S. Embodied rationality. *Queen's Law J.* 2009, 35, 117–164. <https://doi.org/10.2139/ssrn.1404020>.
- Tahat, D.N.; Habes, M.; Tahat, K.; Pasha, S.A.; Attar, R.W.; Al-Rahmi, W.M.; Alblehai, F. Technology Enhanced Learning in Undergraduate Level Education: A Case Study of Students of Mass Communication. *Sustainability* 2023, 15, 15280. <https://doi.org/10.3390/su152115280>.
- Thornton, P.K. Livestock production: recent trends, future prospects. *Phil. Trans. R. Soc. B* 2010, 365, 2853–2867. <https://doi.org/10.1098/rstb.2010.0134>.
- Tocqueville, A. *Democracy in America.* University of Chicago Press: Chicago, USA, 2002.
- Tomyuk, O. N.; Diachkova, A. V.; Dudchik, A. Yu.; Kerimov, A. A. The educational potential of media content in the context of the formation of the individual legal culture. *Perspektivy nauki i obrazovania – Perspectives of Science and Education* 2022, 60(6), 583-597. <https://doi.org/10.32744/pse.2022.6.35>.
- Trudeau, P.E. *The Essential Trudeau.* M&S: Toronto, Canada, 1998.
- Tyler, T.R.; Caine, A. The influence of outcomes and procedures on satisfaction with formal leaders. *Journal of Personality and Social Psychology* 1981, 41, 642. <https://doi.org/10.1037/0022-3514.41.4.642>.
- Tyler, T.R.; Rasinski, K.A.; McGraw, K.M. The influence of perceived injustice on the endorsement of political leaders. *Journal of Applied Social Psychology* 1985, 15, 700–725. <https://doi.org/10.1111/j.1559-1816.1985.tb02269.x>.
- Tyler, T.R.; Van der Toorn, J. Social justice. In *The Oxford handbook of political psychology*, 2nd ed; Huddy, L., Sears, D.O., Levy, J.S., Eds.; Oxford University Press: Oxford, UK, 2013; pp. 627–661.

- Uda, S.; Basrowi, B. Environmental education using SARITHA-Apps to enhance environmentally friendly supply chain efficiency and foster environmental knowledge towards sustainability. *Uncertain Supply Chain Management* 2024, 12(1), 359–372. <https://doi.org/10.5267/j.uscm.2023.9.015>.
- UNESCO. World Conference on Education for Sustainable Development: Conference Report by the General Rapporteur; UNESCO: Paris, France, 2015; Available online: <https://unesdoc.unesco.org/ark:/48223/pf0000232888> (accessed on 10 April 2024).
- United Nations. About Democracy and Human Right. Available online: <https://www.ohchr.org/en/about-democracy-and-human-rights> (accessed on 14 February 2024).
- Ursul, A.D., Marushevsky, G.B. Moral and ethical problems of humanity in the perspective of the transition to sustainable development. *Sociodynamics* 2013, 11, 1–68. DOI: 10.7256/2306-0158.2013.11.1024.
- Usikova, L. Political culture. *Vestnik of Sholokhov Moscow State University for the Humanities: History and Political Science Series* 2010, 1, 90–101. Available online: <http://j-locus.ru/wp-content/uploads/2020/03/Vestnik-1-2010.pdf> (accessed on 20 January 2024).
- Vasconcelos, C.; Paz, M. Inquiring children and elementary school teachers to diagnose their conceptions about islands. *Frontiers in Education* 2023, 8, 1115984. <https://doi.org/10.3389/educ.2023.1115984>.
- Viale, R. La razionalità limitata ‘embodied’ alla base del cervello sociale ed economico. *Sistemi Intelligenti* 2019, 31, 193–203. <https://doi.org/10.1422/92942>.
- Whelan, G. The Political Perspective of Corporate Social Responsibility: A Critical Research Agenda. *Business Ethics Quarterly* 2012, 22(4), 709–737. doi:10.5840/beq201222445.
- Williams, B. A Fair State: Review of John Rawls. *Political Liberalism*, London Review of Books 1993, 15. Available online: <https://www.lrb.co.uk/the-paper/v15/n09/bernard-williams/a-fair-state> (accessed on 14 February 2024).
- Yachina, N. The Problem of Spiritual and Moral Formation of Personality. *Procedia – Social and Behavioral Sciences* 2015, 197, 1575–1579. <https://doi.org/10.1016/j.sbspro.2015.07.113>.
- Zhanbaev, R.; Maksimov, D.; Tansykbayeva, G.; Nurkenova, M.; Abdykadyrkyzy, R.; Tomanov, M.; Kozhakanova, M.; Sadykova M. Features of the Relationship 4D = “D + 3D”: Demoetic – Demographic – Democratic – Demoeconomic and Environmental Components in the Assessment of Sustainable Development of Regions. *International Journal of Pedagogical Advances in Technology-Mediated Education* 2022, 2, 01–09. Available online: <http://patme-journal.iatels.com/index.php/patme/article/view/51> (accessed on 12 February 2023).
- Zhanbayev, R.A.; Irfan, M.; Shutaleva, A.V.; Maksimov, D.G.; Abdykadyrkyzy, R.; Filiz, Ş. Demoethical Model of Sustainable Development of Society: A Roadmap towards Digital Transformation. *Sustainability* 2023, 15, 12478. <https://doi.org/10.3390/su151612478>.
- Zhanbayev, R.A.; Maksimov, D.G.; Sagintayeva, S.S.; Madenova, A.E. Demoeconomics: the interconnection of water resources and demoethical values. *Bulletin of the Karaganda university Economy series* 2024, 29, 1(113), 121–131. <https://doi.org/10.31489/2024ec1/121-131>.
- Zhanbayev, R.A.; Temirbaeva, G.R.; Aibossynova, D.A.; Yerkin, A.Y.; Maksimov, D.G. Quasi-public Sector: Sustainable Development Goals (SDG) and Tools for Their Integration into Corporate Strategies. *Scientific Journal “Bulletin of NAS RK”* 2022, 5, 253–269. <https://doi.org/10.32014/2022.2518-1467.375>.
- Zhanbayev, R.A.; Yerkin, A.Y.; Shutaleva, A.V.; Irfan, M.; Gabelashvili, K.; Temirbaeva, G.R.; Chazova, I.Y.; Abdykadyrkyzy, R. State asset management paradigm in the quasi-public sector and environmental sustainability: Insights from the Republic of Kazakhstan. *Front. Environ. Sci.* 2023, 10, 1037023. <https://doi.org/10.3389/fenvs.2022.1037023>.