Educational Establishment
"Belarusian State University of Culture and Arts"

Faculty of Cultural Studies and Sociocultural Activities
Department of Information Technologies in Culture

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TRAINING AND METODOLOGY COMPLEX
ON THE EDUCATIONAL DISCIPLINE

INFORMATION TECHNOLOGIES IN CULTURAL STUDIES

for specialty 1-21 80 13 Cultural science
second level of higher education at the university (magistracy)

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CONTENTS

1. EXPLANATORY NOTE

The curriculum of the academic discipline «Information Technologies in Cultural Studies» is designed for foreign students who get an education in English and assimilate the curriculum of the second stage of higher education. This educational and methodological complex is designed to develop knowledge and skills of scientific, pedagogical and research work as well as for the attainment of a master's degree.

Modern standards of cultural education require students' ability and skills to analyze the evolutionary processes of society's cultural life, the basic laws and variations of its development. The discipline «Information technologies in cultural studies» is designed to teach students to conduct cultural studies on their own to investigate the culture and its structure on the empirical level.

The content of the educational and methodological complex is aimed at forming general-purpose competencies, including skills to use information technologies for analytical and forecasting purposes in professional activities, modelling of the innovative socio-cultural processes and phenomena, identifying the trends in their development (GC-3); as well as advanced professional competencies in development and application of information resources in socio-cultural institutions and organizational activities (GPC-5).

The interdisciplinary discipline «Information Technologies in Cultural Studies» is related to the discipline «Organizing and conducting scientific research», which is included in the module «Research work».

The purpose of the educational and methodological complex is to train students to organize cultural studies, prepare research programs, collect and process statistical data, summarize and analyze research results, formulate conclusions and recommendations on cultural policy.

The content of the educational and methodological complex includes: general characteristics of social and cultural studies (their types), methods and approaches of sociocultural studies organization and conducting sociocultural researches, approaches for developing research programs, results in processing, research

conclusions generalization and presentation, techniques for developing recommendations and implementing in practice.

Successfullearningofthedisciplinerequiresastudenttoknowthebasicsofpsychology, pedagogyandsociology.

The educational and methodical complex of the discipline includes the following sections: explanatory note, theoretical, practical, knowledge control, auxiliary. The theoretical section contains materials that introduce students to the topics of lectures and the texts of lectures. The practical section contains the topics of laboratory work, tasks and recommendations for their implementation. The knowledge control section includes a list of credit requirements, criteria for assessing the results of educational activities, independent work assignments of students, control questions on topics, a list of questions for credit. The auxiliary section contains the curriculum, educational and methodological plans for daytime and part-time forms of education, a list of basic and additional literature.

2. THEORETICAL SECTION

2.1 Topics of lectures

Topic 1. Cultural and Sociocultural Studies: Research Field, Theoretical andMethodological Foundations

Lectures 1 Problem field and theoretical and methodological foundations of cultural and socio-cultural research.

Topic 2. Technologies of Cultural and Sociocultural Dimensions

Lectures 2 Cultural and socio-cultural dimensions. Information resources as a means for building measures and evaluating the effectiveness in the field of culture.

Topic 3. Information Technology Approaches to Culture and Cultural Processes Studies

Lectures 3 Methods of research on culture and cultural processes. Quantitative and qualitative methods of statistical analysis

Topic 5. Processing of the Results of Cultural Research

Lectures 4 Processing of the results of cultural research.

2.2LECTURES

Lecture 1

Problem field and theoretical and methodological foundations of cultural and socio-cultural research

Topic 1. Cultural and Sociocultural Studies: Research Field, Theoretical and Methodological Foundations

2 hours

Main issues

1. *Object and subject of cultural studies.*
2. *Culture as a specific object and subject of research.*
3. *Society as an object of socio-cultural research.*
4. *Research field of the cultural and sociocultural studies.*
5. *Methodological principles of researchin the socio-cultural field.*
6. *The Internet content as an object of the cultural research.*

The aim is*to consider the problem field, theoretical and methodological foundations of cultural and sociocultural studies.*

The modern scientific worldview perception links three conceptual components: the system of views on the world and the place of the human in this world; philosophy, as the variety of theorieson human existence and cognition of this existence; and culture, as the practice of human existence in the world.

Culturology is a branch of social sciences concerned with research of various processes in societies: social, political, economic, moral, scientific and technical and many others. Culturology studies the most general laws of the cultures development, the principles of their functioning, correlationof various cultures values, taking into account different eras and peoples, as well asthe correlation of cultures and civilization development. Social and cultural studies focuses on scientific understanding, description, analysis, and prediction of culturesdevelopment as a

whole. Culturologybasing on unifying principle, synthesizing and combining phenomena, accumulating multiple approaches developed in philosophical, sociological, historical, art history, technology and sciences, allowing to generate holistic picture of the world, in the integrity of the general and the particular. Thus, cultural studies are built on principles that came from neoclassical physics - synergetics, uncertainty and complementarity.

–*synergetics*allows us to consider the existence of culture as a self-organizing structure that arises as a result of the action of human cultural forces and is able to resist entropy;

– *the uncertainty principle* assumes the parameters such as coordinate and impulsenon to be simultaneously accurately measured (you can either analyze the space-time coordinates of an object or its impulse and energy). When applied to socio-cultural sphere this principle gains metaphorical meaning: first one describes the space-time continuum of culture, and then within it tries to identify the "impulses" that have determined the specific pattern of the culture;

– the complementarity principle considers the space-time and energy-impulse components as dynamic variables characterizing the system, considering them as interacting groups. Thus by identifying historical and culturally relevant dimensionsthe description of specific phenomena can be achieved in all the completeness.

Traditional cultural studies consist of three main components:

– *theoretical or fundamental cultural studies* are focused on the most general patterns of cultural development, forming the holistic system of principles, methodologies and methods of cognition, systematizing and analyzing cultural phenomena;

– *historical cultural studies* are dealt with phenomena of culture unfolding in time, exploring historical epochs and their dominants;

– applied cultural studies are aimed at substantiating and directly developing methods, approaches and technologies that contribute to the organization and regulation of cultural processes in society.

Sociocultural approach is a methodological approach based on a systemway of considering society as a unity of culture and sociality, which are transformed by human activity.

*Sociocultural studies*are based on research methods of two sciences - cultural anthropology and sociology. For example, to study the behavior patterns dynamics in cultural anthropology and predict their development, it is necessary to analyze the distribution of such patterns within the social structure and stratification of the studied society. The sociocultural approach, representing one of many ways of describing phenomenological reality, is based on actual principles that guide the researcher, and which are a consequence of his own experience and worldview. These principles are comprehended as key statements regarding the nature, properties and characteristics of the investigated reality. The principles form a methodological framework that allows the researcher to resolve the existing conceptual contradictions by choosing from the set of initial theoretical postulates,which are developed when considering complex social phenomena, the one that best meets the goals and objectives of the study. The main principles of the sociocultural approach are as follows:

–*homo activus principle* considers a person as bio-socio-cultural actor, realizing that his actions are a component of interaction with other individuals, which being self-sufficient personwith free will and choice influences social norms in the course of its actions;

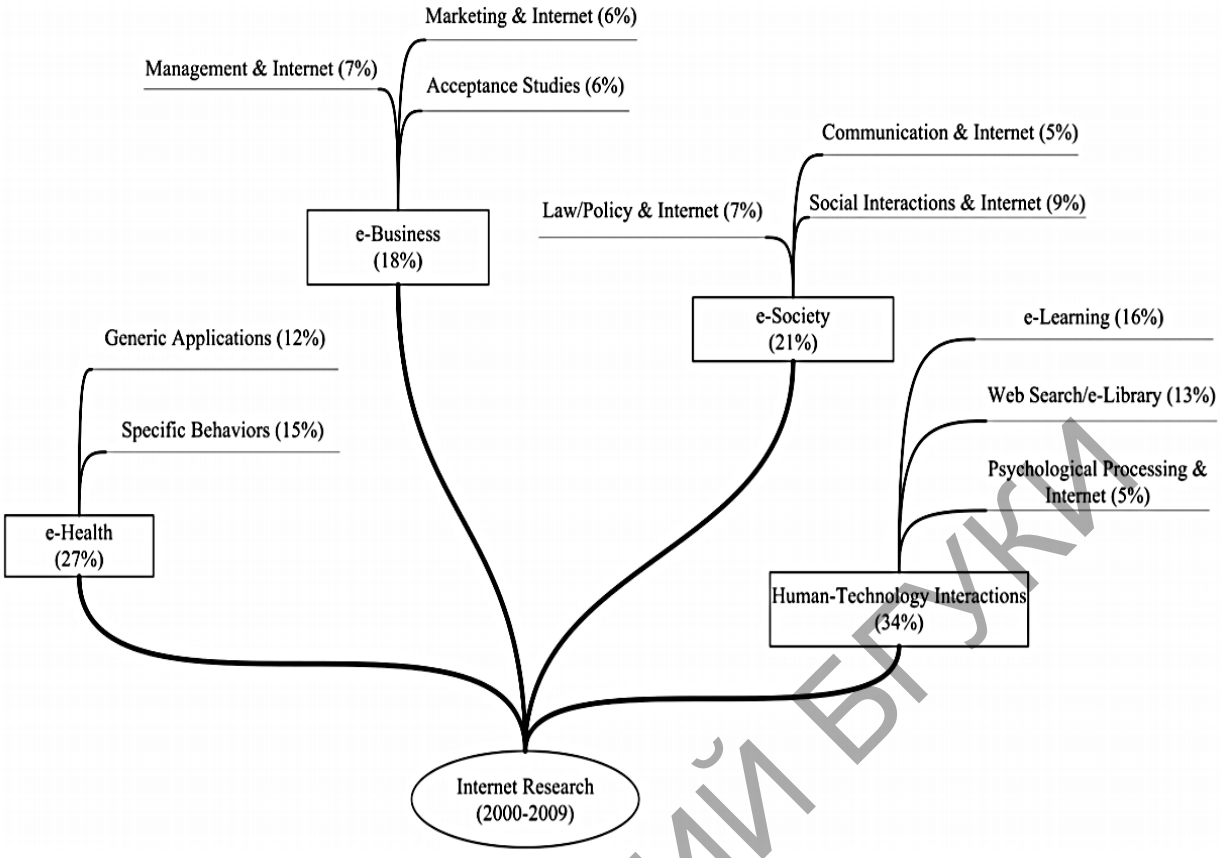
– *evolution principle* means the ability of a system to develop, which allows to assert that new qualitatively various sociocultural phenomena emergence in the process of society development;

–*anthroposocial interaction principle* determines the driving forces of the society evolution and the role of *homo activus* in this process. According to this principle, the self-consciousness of *homo activus*might or might not correspond to the society type of his or her location, which, at a certain period, leads to a change in the socio-cultural environment.

Today one of the leading roles in sociocultural studies plays big data analysis. Modern information technology provides researchers with both a powerful toolkit for analyzing big data and opportunities for the accumulation and access to the data representing various cultural fields. One of the most powerfultoolsof the area is the Internet. B the Internet itself became the field for the cultural researches.

Internet Studies isan interdisciplinary and multidisciplinary field of fundamental and applied research focusingon the Internet as an object of the research.Todaythe Internet studies have a strong focus on the social sciences. Recentlythe new trend referred to as Big Data has emergedunder the influence of advances in computer science, informatics and artificial intelligence research. Research tasks, including the collection and analysis ofBig Data from the Internet, are largely set and performed by specialists with strong mathematical and programming background.Thus today Internet research cannot be imagined without a strong component of technical sciences. An area adjacent to and largely intersecting with Internet research, but based on computer science, is called Web Science. It studies the functioning of large-scale socio-technical systems, such as the World Wide Web, and operates primarily on data available from the Internet, so-called "digital footprints" - "natural" data left by users on social networking sites and other Internet platforms.

A Chinese team of authors compiled a thematic map of Internet research based on an analysis of more than 27 thousand publications from peer-reviewed journals in social sciences indexed in the Social Sciences Citation Index (SSCI) and Arts & Humanities Citation Index (A & HCI) of the Institute for Scientific Information (ISI) and the Web of Science resource (social review). The authors of the article analyzed the texts of annotations and keywords using the clustering method.As a result they grouped publications in several directions which are represented on the picture 1.



Picture 1 – Distribution of Publications

*Key concepts:*cultural studies, sociocultural field, problem research field, methodological bases.

Lectures 2

Cultural and socio-cultural dimensions. Information resources as a means for building measures and evaluating the effectiveness in the field of culture.

Topic 2. Technologies of Cultural and Sociocultural Dimensions

2 hours

Main issues

1. *Phenomenon of cultural dimensions.*
2. *Typology of Hofstede's cultural dimensions.*
3. *Parameters of Hofstede's model: Individualism (IDV), Masculinity (MAS), uncertainty avoidance (UAI), long-term orientation (LTO), assumption (or indulgence).*
4. *Modern models of cultural metrics and their parameters.*
5. *Problems of quantitative assessment in the cultural field.*
6. *Assessment approaches of cultural effectiveness.*
7. *Information technology as a mean to develop metrics and evaluation of cultural effectiveness.*

*Theaim*is*to consider models of cultural and socio-cultural dimensions, as well as information resources for building measurements and evaluating effectiveness in the field of culture.*

Dimensions in cultural and social studies mean a coordinate system defined by priorities, values, standards, practices and mechanisms of the corresponding measured area functioning.Cultural Dimensions provide the possibility to use mathematical, statistical and Big Data means of analysis to the cultural processes.

Consider some Cultural Dimensions models.

Hofstede's cultural dimensions model[14]

Power distance index (PDI): The power distance index is defined as "the extent to which the less powerful members of organizations and institutions (like the

family) accept and expect that power is distributed unequally". In this dimension, inequality and power is perceived from the followers, or the lower strata. A higher degree of the Index indicates that hierarchy is clearly established and executed in society, without doubt or reason. A lower degree of the Index signifies that people question authority and attempt to distribute power.

Individualism vs. collectivism (IDV): This index explores the "degree to which people in a society are integrated into groups". Individualistic societies have loose ties that often only relate an individual to his/her immediate family. They emphasize the "I" versus the "we". Its counterpart, collectivism, describes a society in which tightly-integrated relationships tie extended families and others into in-groups. These in-groups are laced with undoubted loyalty and support each other when a conflict arises with another in-group.

Uncertainty avoidance (UAI): The uncertainty avoidance index is defined as "a society's tolerance for ambiguity", in which people embrace or avert an event of something unexpected, unknown, or away from the status quo. Societies that score a high degree in this index opt for stiff codes of behavior, guidelines, laws, and generally rely on absolute truth, or the belief that one lone truth dictates everything and people know what it is. A lower degree in this index shows more acceptance of differing thoughts or ideas. Society tends to impose fewer regulations, ambiguity is more accustomed to, and the environment is more free-flowing.

Masculinity vs. femininity (MAS): In this dimension, masculinity is defined as "a preference in society for achievement, heroism, assertiveness and material rewards for success". Its counterpart represents "a preference for cooperation, modesty, caring for the weak and quality of life". Women in the respective societies tend to display different values. In feminine societies, they share modest and caring views equally with men. In more masculine societies, women are somewhat assertive and competitive, but notably less than men. In other words, they still recognize a gap between male and female values. This dimension is frequently viewed as taboo in highly masculine societies.

Long-term orientation vs. short-term orientation (LTO): This dimension associates the connection of the past with the current and future actions/challenges. A lower degree of this index (short-term) indicates that traditions are honored and kept, while steadfastness is valued. Societies with a high degree in this index (long-term) view adaptation and circumstantial, pragmatic problem-solving as a necessity. A poor country that is short-term oriented usually has little to no economic development, while long-term oriented countries continue to develop to a level of prosperity.

Indulgence vs. restraint (IND): This dimension refers to the degree of freedom that societal norms give to citizens in fulfilling their human desires. Indulgence is defined as "a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun". Its counterpart is defined as "a society that controls gratification of needs and regulates it by means of strict social norms".

Let us summaries the results in the following table 1

Table 1 -Hofstede's cultural dimensions model

Cultural dimension	Definition	Examples
Power distance	***Power distance*** is the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.	**Low**: U.S. and Canada **High**: Japan and Singapore
Individualism and collectivism	***Individualism*** describes cultures in which the ties between individuals are loose. ***Collectivism*** describes cultures in which people are integrated into strong, cohesive groups that protect individuals in exchange for unquestioning loyalty.	**Individualistic**: U.S., Australia, and Great Britain **Collectivistic**: Singapore, Hong Kong, and Mexico
Masculinity-femininity	***Masculinity*** pertains to cultures in which social gender roles are clearly distinct. ***Femininity*** describes cultures in which social gender roles overlap.	**Masculinity**: Japan, Austria, and Italy **Femininity**: Sweden, Norway, and Netherlands
Uncertainty avoidance (UAI)	***Uncertainty avoidance*** is the extent to which the members of a culture feel threatened by uncertain or unknown situations.	**Low**: Singapore, Jamaica, and Denmark **High**: Greece, Portugal, and Japan
Confucian dynamism	***Confucian dynamism*** denotes the time orientation of a culture, defined as a continuum with long-term and short-term orientations as its two poles.	**Long-term**: China and Japan **Short-term**: U.S. and Canada

Hofstede's theory is often criticized for the lack of attention to the current political and economic situation in the studied countries, meanwhile, it is quite obvious that the events taking place in the country affect the culture. Consequently, in

cultural research, it is necessary to track cultural changes taking into account the time factor and identify indicators that contribute to the occurred changes[13].

Inglehart–Welzel Cultural Dimensions [6]

1) Traditional values versus Secular-rational values and

2) Survival values versus Self-expression values.

Traditional values emphasize the importance of religion, parent-child ties, deference to authority and traditional family values. People who embrace these values also reject divorce, abortion, euthanasia and suicide. These societies have high levels of national pride and a nationalistic outlook.

Secular-rational values have the opposite preferences to the traditional values. These societies place less emphasis on religion, traditional family values and authority. Divorce, abortion, euthanasia and suicide are seen as relatively acceptable. (Suicide is not necessarily more common.)

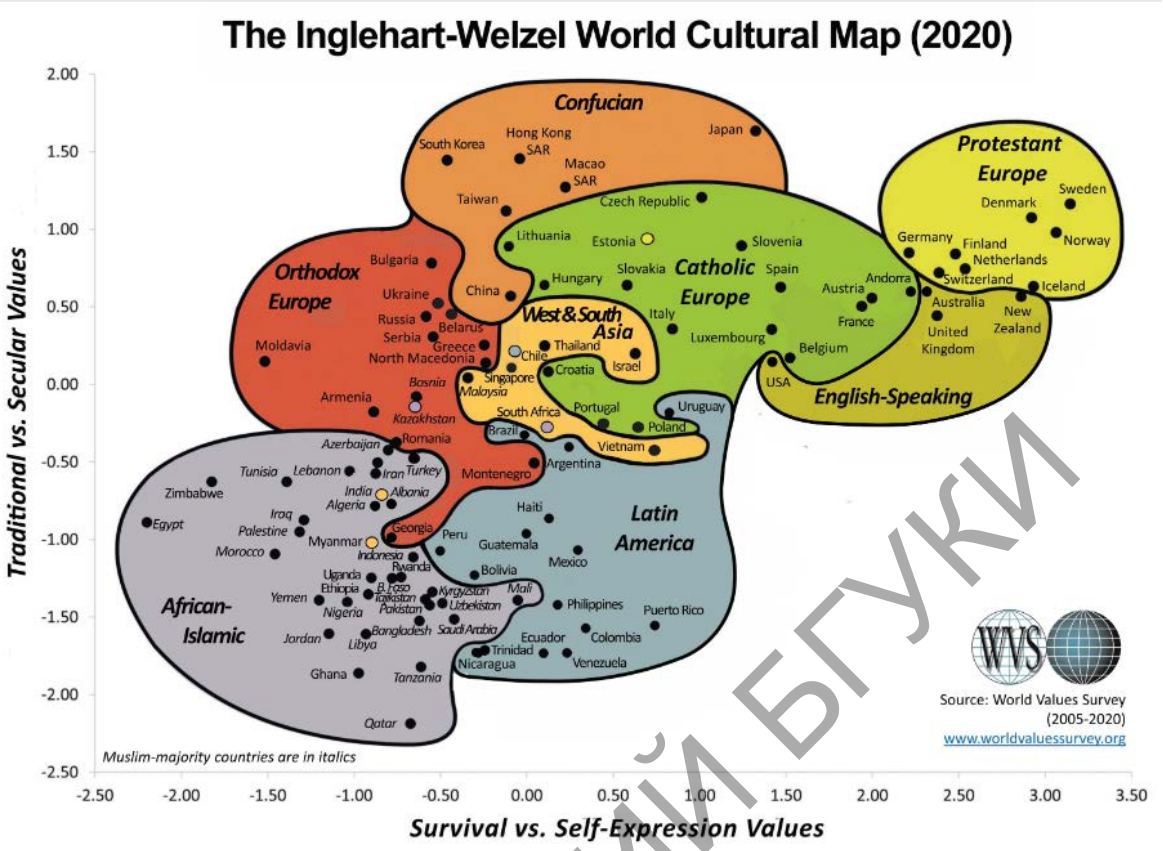
Survival values place emphasis on economic and physical security. It is linked with a relatively ethnocentric outlook and low levels of trust and tolerance.

Self-expression values give high priority to environmental protection, growing tolerance of foreigners, gays and lesbians and gender equality, and rising demands for participation in decision-making in economic and political life.

The distribution of the countries according the Inglehart–Welzel Cultural Dimensions based of 2017-2020 surveys data analysis is represented bellow on the picture 2.

Measuring the efficiency in the field of culture

Efficiency is the ratio of the effect and the costs that caused it, which is a relative value and is measured in fractions of a unit or as a percentage, while characterizing the effectiveness of costs. The criterion of efficiency is maximizing the effect at a given cost or minimizing the cost of achieving a given effect. At the same time, it is necessary to clarify that the effect is the result of the activity.



Picture 2– The distribution of the countries according Inglehart–Welzel Cultural Dimensions based on 2017-2020 World Values Survey data

In general, there are several types of effects in the economy: economic, resource, technical, and social. The economic effect implies an increase in labor productivity and a decrease in labor intensity, a decrease in material consumption and cost, an increase in profits and profitability. The resource effect, in turn, reflects the release of resources at the enterprise: material, labor and financial. The technical effect is the result of the emergence of new technology and technology, discoveries, inventions and rationalization proposals, know-how and other innovations. The social effect indicates an increase in the material and cultural standard of living of citizens, a more complete satisfaction of their needs for goods and services, an improvement in working conditions and safety, a decrease in the share of heavy manual labor, etc.

For calculating each component of the composite efficiency index it is necessary to establish their minimum and maximum values, with which the actual

data will be compared. Determination of the composite efficiency index can be carried out in three stages.

The first stage is to determine the social performance index; economic efficiency index; organizational performance index; technological efficiency index using the "element index" according to the following formula:

$$element\ index = \frac{actual\ value - minmal\ value}{maximal\ value - minmal\ value}$$

The second stage is to compare the indices of social, economic, organizational and technological efficiency in order to determine which direction is developing more efficiently. If the index of organizational efficiency is higher, then the process of organizing labor and work processes is rapidly developing in the activities of a cultural institution, if a higher index of economic efficiency means more attention in the organization is paid to the efficient use of resources, etc.

The third stage is calculation of the composite efficiency index as a the arithmetic mean of the indices of social, economic, organizational and technological efficiency. The obtained result plays the role of indicator of the level of efficiency of the cultural institution. This indicator can be used to compare the activities of different cultural organizations operating in different conditions and performing their tasks in different ways.

Electronic resources as data sources for constructing dimensions, measurements and assessments for conducting researches in the field of culture:

WorldValuesSurvey:

- http://www.worldvaluessurvey.org/WVSContents.jsp;

UNESCO Institute for Statistics:

- http://uis.unesco.org/
- https://apiportal.uis.unesco.org/
- http://data.uis.unesco.org/
- http://uis.unesco.org/sites/default/files/documents/unesco-framework-for-cultural-statistics-2009-ru.pdf;

WorldBankOpenData

- https://data.worldbank.org/
- http://wdi.worldbank.org/table/
- http://wdi.worldbank.org/table/5.13
- http://wdi.worldbank.org/table/5.12

HofstedeInsights

- https://www.hofstede-insights.com/

*Key concepts:*cultural dimensions, parameters of the dimensions model, quantitative assessments, cultural effectiveness.

Lectures 3

Methods of research on culture and cultural processes. Quantitative and qualitative methods of statistical analysis

Topic 3. Information Technology Approaches to Culture and Cultural Processes Studies

2 hours

Main issues

1. *Methods of cultural studies.*
2. *General approaches: dialectical, systemic, structural-functional, comparative, typological.*
3. *Specific approaches: anthropological, semiotic, hermeneutic, biographical, historical, diachronic, synchronic, archaeological, psychological.*
4. *Applying software for the quantitative and qualitative statistical analysis to socio-cultural studies.*
5. *Methodological problems of applying quantitative methods in cultural studies.*
6. *Survey methods in quantitative studies (interviews, questionnaires, online surveys) and instrumental means of their arrangement.*
7. *Interpreting the results of quantitative research problem.*
8. *Internet as a mean of research the specifying data. Statistical analysis of documents by means of information technology: quantitative analytical-documentary approach.*

*Theaim*is*to considerthe main methods of studying culture and cultural processes, quantitative and qualitative methods of statistical analysis.*

Culture research methods combine analytical techniques and procedures used in the analysis of culture. In the process of cultural analysis, the methods of different disciplines, as a rule, are used selectively, taking into account their ability to solve analytical problems fromthe socio-cultural sphere. All this gives grounds to say that

in the process of cultural studies the methods of attendant disciplines meet with a certain transformation.

The culture researchmethod is an integrative method of analysis.

The sociological method allows you to determine the relationship between different layers of society groups in culture, including demographic.

The value-based approach focuses mainly on the relations and assessment phenomena.

The psychological aspect of the analysis draws attention to the specifics of creativity and perception of culture, mechanisms and storage in the memory of society or individual cultures, their influence on human behavior.

System-structural analysis allows identifying all the components and relationships of the cultural system and its individual formations, identifying the nature of their interaction, and tracing the degree and quality of interaction.

Digital approaches in culture focus on finding patterns, dynamics, and relationships in the cultural data.

Culturology does not reveal rigid cultural laws, but studies cultural patterns and builds mathematical models that predict these patterns. The main task in this context is to determine the problem field of using information technologies in cultural studies. Thus, *information methods* in cultural studies include:

– Big Data analysis;
– digital modeling and visualization of cultural processes and phenomena;
– statistical analysis of cultural processes;
– systematization and classification of data using information database systems.

Having identified the information methods that are used in the analysis of culture, it is worth noting their shortcomings. One of the significant problems is the problem of the content formalization and data structuring for algorithms and for ways of presenting the results obtained. Objectivity of mathematical theory leads to the mechanization of the process of knowledge and their reduction to a set of rules. However, in the analysis of culture, objectivity and universalism can only lead to

distortions of the data obtained. For example, quantitative analysis is more easily perceived as “evidence”, while rhetoric and cultural differences remain at the level of “argumentation”.

Quantitative and qualitative methods of statistical analysis for conducting research in the socio-cultural sphere make it possible to systematize the information obtained using empirical methods and draw conclusions about the cause-and-effect relationships between phenomena. Qualitative methods focus on the analysis of information presented mainly in verbal form. Quantitative methods being mathematical in nature are based on techniques for processing digital information. Qualitative analysis is a preliminary procedure for the application of quantitative methods; it is aimed at identifying the internal structure of the data, that is, at clarifying those categories that are used to describe the studied sphere of reality. When descriptive categories are clear, it is easy to move on to the simplest measurement procedure - counting. With a qualitative analysis, it becomes necessary to encode information. Coding is the process of analyzing qualitative information, which includes the allocation of semantic segments of information or real behavior, their categorization (naming) and reorganization.It is necessary to find a form of data presentation that is most convenient for analysis. The main technique here is schematization. The scheme always simplifies real relationships. Schematization of relations at the same time is the indicator of information compression. But it also presupposes finding a visual and easily visible form of information presentation. For this purpose, the data can be summarized in tables or charts.Thus, the main techniques of qualitative analysis are coding and visual presentation of information.

Quantitative analysis includes methods of statistical description of the sample and methods of statistical inference (testing statistical hypotheses).Quantitative (statistical) methods of analysis are widely used in scientific research in general and in the social sciences in particular. Sociologists use statistical methods to process the results of mass polls of public opinion. Psychologists use the apparatus of mathematical statistics to create reliable diagnostic tools - tests.

All methods of quantitative analysis are usually divided into two large groups. Descriptive Statistics methods are aimed at quantifying the data obtained in a particular study. Inferential Statistics methods allow extending correctly the results obtained in a particular study to the entire phenomenon and drawing general conclusions. Statistical methods make it possible to identify stable trends and build on this basis theories designed to explain them.

To use statistics, two basic conditions are required:

a) it is necessary to have data;

b) the data must be presented in a formalized (codified) form.

Software for statistical analysis:

Microsoft Excel – program for working with spreadsheets.

SPSS –statistical package for social science.

STATISTICA – statistical analysis package developed by the company StatSoft.

STATA – professional statistical software package, one of the most popular in educational and scientific institutions in the United States along with SPSS.

STATGRAPHICS PLUS – powerful statistics program. Contains over 250 statistical functions.

R – a programming language for statistical processing of data and working with graphics, as well as a free software environment for open source computing within the framework of the GNU project.

*Key concepts:*cultural studies methods, quantitative and qualitative methods, survey methods, statistical analysis.

Lectures 4

Processing of the results of cultural research.

Topic 5. Processing of the Results of Cultural Research

2 hours

1. *Main issues*
2. *Probability theory and applied statistics.*
3. *Statistical experiment and representation of experimental data.*
4. *The statistical population and random value realization.*
5. *Basic statistical models.*
6. *Dispersion estimation, correlation analysis, linear regression analysis.*
7. *Explanation and interpretation of the cultural study results.*
8. *Information technology means for applied statistics problems solving.*
9. *Capabilities of statistical analysis software and spreadsheets.*

*Theaim*isto consider statistical methods of processing the results of cultural research.

Probability theory and applied statistics are the foundations of statistical methods of analysis. To use these mathematical approaches to cultural studies it is necessary to build statistical models. The application of a specific statistical method in cultural studies includes three stages:

– the transition from cultural, social, historical, political reality to an abstract mathematical and statistical model of the studied system or process.

– carrying out calculations and obtaining conclusions by purely mathematical means within the framework of a statistical model;

– interpretation of mathematical and statistical conclusions in relation to a real situation and development of the management decisions in cases where this was required by the research tasks.

The term «statistics» is also used in two meanings. First, in everyday life, statistics is often understood as a set of quantitative data about a phenomenon or process. Second, statistic is a function of observation results used to estimate characteristics and parameters of distributions and test hypotheses.

Statistics consists of three sections:

1) collection of statistical information characterizing units of mass populations;

2) statistical study of the data obtained with identifying the patterns that can be detected on the basis of mass observation data;

3) development of techniques for statistical observation and statistical data analysis.

Mathematical statistics is a section of mathematics devoted to mathematical methods for collecting, systematizing, processing and interpreting statistical data, as well as using them for developing scientific or practical conclusions. The rules and procedures of mathematical statistics are based on the theory of probability, which makes it possible to assess on the available statistical material the accuracy and reliability of the conclusions obtained. Mathematical statistics is usually divided into three sections according to the type of problems being solved:

– data description;
– estimation;
– hypothesis testing.

Applied statistics is aimed at solving real problems, therefore, new formulations of mathematical problems for the statistical data analysis are constantly emerging, and new methods are being developed and substantiated in this mathematical field. Justification is often carried out using mathematical methods, i.e. by proving theorems. The methodological component plays an important role in applied statistics: how to set tasks correctly, what assumptions to make to reach the purpose of the study. Today the great role in statistical data analysis plays modern information technology, in particular, in setting computer experiments.

By the type of processed statistical data, mathematical statistics is divided into four areas:

– one-dimensional statistics (statistics of random variables), in which the observation result is described by a real number;

– multivariate statisticals, where the result of observation over an object is described by several numbers (vector);

– statistics of random processes and time series, where the observation result is a function;

– statistics of objects of a non-numerical nature, in which the observation result is of a non-numerical nature, for example, it is a set (geometric figure), an ordering, or is obtained as a result of measurement on a qualitative basis.

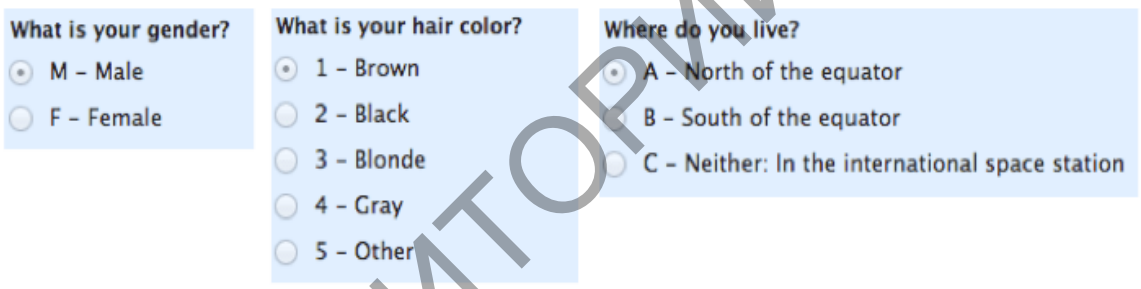
Data processing methods of mathematical statistics are evidence based and work with probabilistic models of relevant real phenomena and processes, such as the consumer behavior models, risks models, technological equipment functioning models, diseases models, etc. A probabilistic model of a real phenomenon should be constructed on the base of the quantities under consideration and the relationships between them which are expressed in terms of probability theory. The correspondence of the probabilistic model to reality and its adequacy is substantiated by using statistical methods for testing hypotheses. Non-probabilistic methods of data processing are exploratory, they can be used only for preliminary data analysis, since they do not make it possible to assess the accuracy and reliability of conclusions obtained on the basis of limited statistical material.

An *experiment* is aimed to study the effect of a single factor (or several factors) on a variable of research interest. Experimental research is built in accordance with the rules of inductive inference about the presence of a causal relationship between events: 1) demonstrating the regular nature of the appearance of a “response” event after the previous exposure event in time and 2) excluding experimental isolation by means of special techniques and control alternative explanations for the emergence of "response" with the help of extraneous influences and competing causal hypotheses. Experimental data represent the best approximation to the model of statistical inference about the presence of a causal relationship between exposure and "response" or, in other terms, between the independent and dependent variables. A

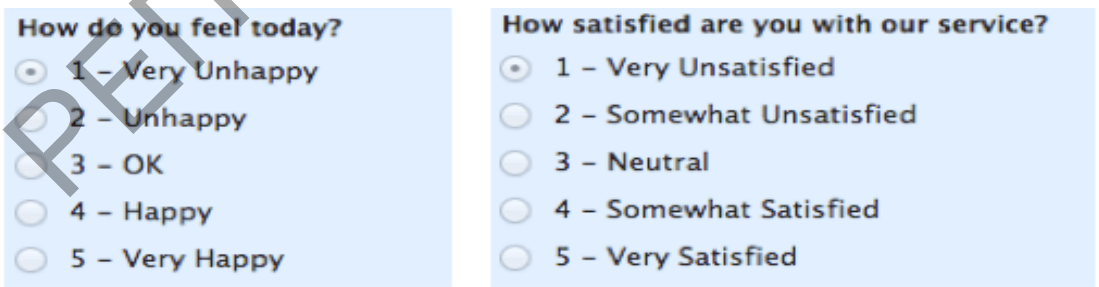
statistical experiment is aimed at collecting statistical data. An experiment is also called statistical if it can be repeated under certain conditions and unlimited number of times. For example, filling out a questionnaire by a group of students can be classified as a statistical experiment.

The type of experimental data determines the form of data presentation, the degree of the data dependence on time and the nature of the data itself. One of the main forms of data representation is symbolic, it includes the form of numbers, binary values or text. Various measurement scales are used to set the values of the respective quantities. In statistics, there are four data measurement scales: nominal, ordinal, interval and ratio.

Nominal scales could simply be called «labels». Sub-type of nominal scale with only two categories, for example male and female is called «dichotomous». Other sub-types of nominal data are «nominal with order» like cold, warm, hot, very.



Ordinal scales define the order of the values but the differences between each one is not really known. Ordinal scales are typically measures of non-numeric concepts like satisfaction, happiness, discomfort, etc.



The best way to determine central tendency on a set of ordinal data is to use the mode or median.

Interval scales are numeric scales in which we know both the order and the exact differences between the values. The classic example of an interval scale is Celsius temperature because the difference between each value is the same. Interval

scales don't have a «true zero», for example, there is no such thing as «no temperature».

Ratio scales reflect the order, exact value between units and have an absolute zero, which allows to be applying them for a wide range of both descriptive and inferential statistics.

Provides:	Nominal	Ordinal	Interval	Ratio
The "order" of values is known		✔	✔	✔
"Counts," aka "Frequency of Distribution"	✔	✔	✔	✔
Mode	✔	✔	✔	✔
Median		✔	✔	✔
Mean			✔	✔
Can quantify the difference between each value			✔	✔
Can add or subtract values			✔	✔
Can multiple and divide values				✔
Has "true zero"				✔

The fundamental concepts of statistical analysis are the concepts of probability and random variable. *A random variable* is a numerical description of the outcome of a statistical experiment. A random variable that may assume only a finite number or an infinite sequence of values is said to be discrete; one that may assume any value in some interval on the real number line is said to be continuous. For instance, a random variable representing the number of automobiles sold at a particular dealership on one day would be discrete, while a random variable representing the weight of a person in kilograms would be continuous.

The probability of a certain event, for example, an event consisting in the fact that a random variable took on a certain value, is usually understood as the proportion of the number of outcomes favorable to this event in the total number of possible equally probable outcomes. In other words, probability tells us how often some event

will happen after many repeated trials. The category of "equiprobable outcomes" is not defined, but accepted intuitively. For example, when "tossing a coin", heads and tails are considered equally probable (the probability of each is 1/2), and the random value of the number of "heads" in one "coin toss" can be equal to 0 or 1 with probabilities 1/2.

Descriptive statistics are used to describe the basic features of the statistical data. Together with simple graphics analysis, they form the basis quantitative analysis of data. There are three major characteristics of a single variable that are tend to look in majority situations

- the distribution
- the central tendency
- the dispersion

Such analysis is called *Univariate analysis*

The set of values $\{x_k\}$ of the random variable X with the probabilities $\{p_k\}$ is called *the distribution* of the random variable. The $P(X)$ function, like any functional dependence, can be presented in the form of a *table*, *formula or graph*. For example, the distribution of the numbers of points when throwing a dice can be represented in the form of a table 2:

Table 2 -The basis quantitative analysis of data

x_k	1	2	3	4	5	6	Sum
p_k	1/6	1/6	1/6	1/6	1/6	1/6	1

Obviously, the sum of all these probabilities should be equal to one, since we assume that with the probability "one" the variable takes at least one of these values:

$$\sum p_k = 1$$

A *non-random or deterministic variable* is a random variable, taking a single value with a probability of «one»under fixed circumstances.

The central tendency of a distribution is an estimate of the “center” of a distribution of values. There are three major types of estimates of central tendency:

- Mean or Expected Value
- Median
- Mode

In a discrete probability distribution of a random variable *X*, the *Expected Value* is equal to the sum over every possible value weighted by the probability of that value; that is, it is computed by taking the product of each possible value x_k of *X* and its probability p_k, and then adding all these products together:

$$\mu = E(X) = \sum p_k \times x_k.$$

Expected Value or Mean of a collection of *N* equally likely values can be written as

$$\mu = \frac{1}{N} \sum x_k$$

The *Expected Value or Mean* numbers of points on a dice is

$$\mu = 1 \times \frac{1}{6} + 2 \times \frac{1}{6} + 3 \times \frac{1}{6} + 4 \times \frac{1}{6} + 5 \times \frac{1}{6} + 6 \times \frac{1}{6} = \frac{21}{6} = 3{,}5.$$

The *Median* is the score found at the exact middle of the set of values. For example, for the set {6, 3, 3, 5, 8} the *Median* is 5: { 3, 3, **5**, 6, 8}. For the set of dice points numbers {1, 2, **3, 4**, 5, 6} the interpolation is needed:

$$Med = \frac{3+4}{2} = 3.5$$

The *Mode* is the most frequently occurring value in the set of values $\{x_k\}$. For the set {6, 3, 3, 5, 8} the Mode is 3.

Dispersion refers to the spread of the values around the central tendency, including:

- Range
- Quartiles of the data-set
- Variance
- Standard Deviation.

The *Range* is simply the highest value minus the lowest value.

Quartiles are the indicators which divides the number of data points into four parts, or *quarters*, of more-or-less equal size. The data must be ordered from smallest to largest to compute quartiles; as such, quartiles are a form of order statistic. The three main quartiles are as follows:

The *first quartile*Q_1 is defined as the middle number between the smallest number, that is *Minimum* and the *Median* of the data set. It is also known as the lower or 25th empirical quartile, as 25% of the data is below this point.

The *second quartile* $Q_2$is the median of a data set; thus 50% of the data lies below this point.

The *third quartile* Q3 is the middle value between the *Median* and the highest value that is *Maximum* of the data set. It is known as the upper or 75th empirical quartile, as 75% of the data lies below this point.[A modern introduction to probability and statistics : understanding why and how by Dekking, Michel]

Along with the *Minimum* and *Maximum* of the data, which are also quartiles, the three quartiles described above provide a five-number summary of the data. This summary is important in statistics because it provides information about both the center and the spread of the data.

The *Variance* of a random variable *X* is the expected value of the *Squared Deviation* from the *Mean* of *X*:

$$Var(X) = E[(X-\mu)^2] = \sigma^2(X)$$

The expression for the variance can be expanded as follows:

$$Var(X) = E[(X-\mu)^2] = E[X^2 - 2X\mu + \mu^2] = E[X^2] - \mu^2$$

The Variance of a collection of *N* equally likely values can be written as

$$Var(X) = \frac{1}{N}\sum x_k^2 - \mu^2 = \frac{1}{N}\sum x_k^2 - \left(\frac{1}{N}\sum x_k\right)^2 = \frac{\sum\left(x_k^2 - \frac{x_k}{N}\right)}{N}$$

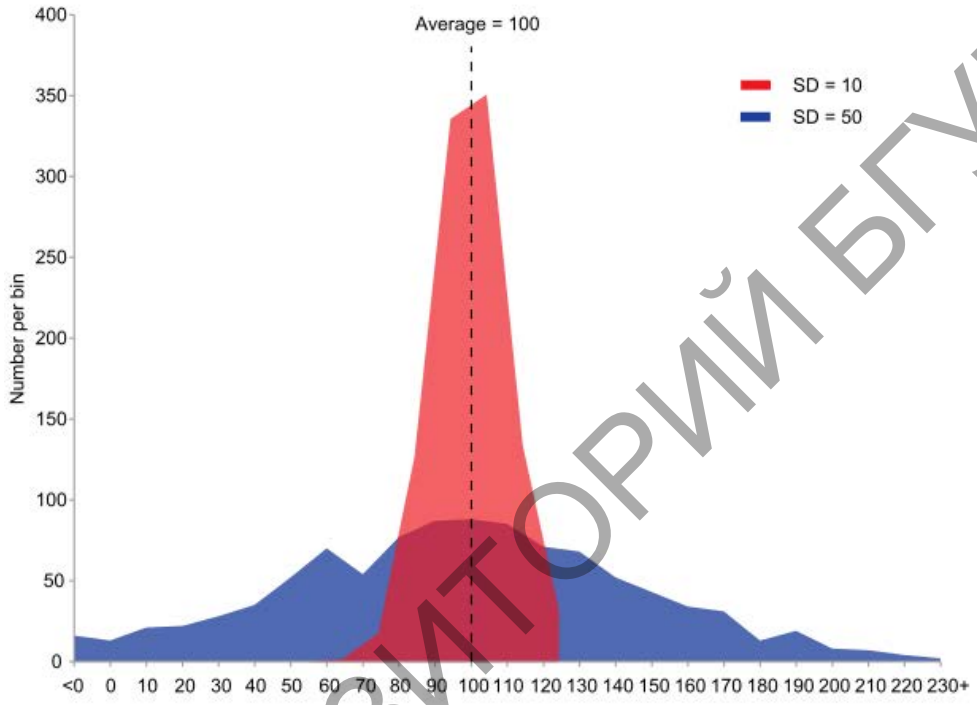
The *Variance* in distribution of numbers of points on a dice:

$$Var(X) = 1\times\frac{1}{6} + 4\times\frac{1}{6} + 9\times\frac{1}{6} + 16\times\frac{1}{6} + 25\times\frac{1}{6} + 36\times\frac{1}{6} - \left(\frac{21}{6}\right)^2 =$$

$$= \frac{91}{6} - \frac{441}{36} = \frac{105}{36} \approx 2{,}92$$

The *Standard Deviation* is a more accurate and detailed estimate of dispersion (picture 3). The *Standard Deviation* shows the relation that set of values $\{x_k\}$ has to the *Mean* or *Expected Value*. The standard deviation σ of X is defined as:

$$\sigma(X) = \sqrt{E[(X-\mu)^2]} = \sqrt{E[X^2] - \mu^2}$$



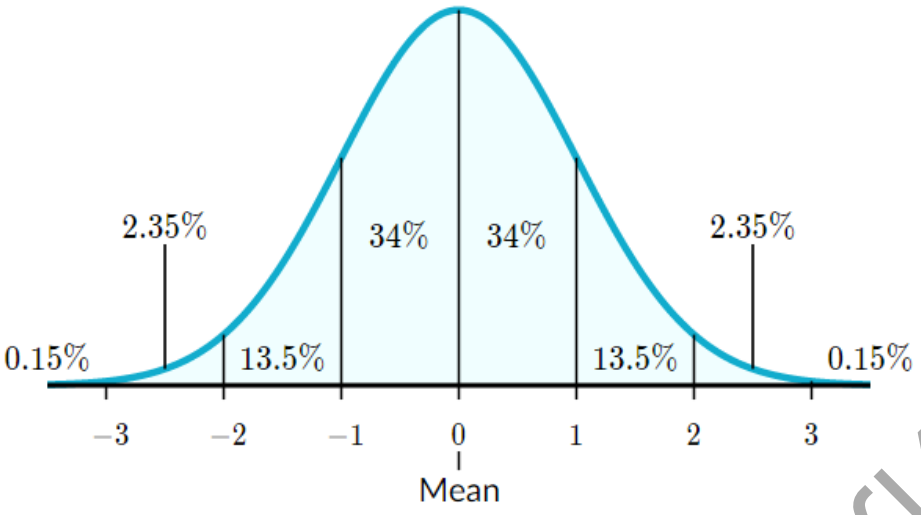
The red set of values has
Mean = 100
Variance = 100
SD = 10
while the blue set of values has
Mean = 100
Variance = 2500
SD = 50

Picture 3 – Two distributions with different Standard Deviations

The *Standard Deviation* in distribution of numbers of points on a dice is

$$\sigma = \sqrt{\frac{105}{36}} \approx 1{,}7$$

Early statisticians noticed the same shape coming up over and over again in different distributions, so they named it the *Normal Distribution*(picture 4).



Picture 4 − Normal Distribution

Normal distributions have the following features:

- symmetric bell shape;
- mean and median are equal; both located at the center of the distribution;
- approximately 68 percent of the data falls within 1 *Standard Deviation* of the *Mean;*
- approximately 95 percent of the data falls within 2 *Standard Deviation* of the *Mean;*
- approximately 99.7 percent of the data falls within 3 *Standard Deviations* of the *Mean.*

In statistics, a general population is the entire pool from which a statistical sample is drawn. A population may refer to an entire group of people, objects, events, hospital visits, or measurements. A population can thus be said to be an aggregate observation of subjects grouped together by a common feature.

A sample is a random selection of members of a population. It is a smaller group drawn from the population that has the characteristics of the entire population. The observations and conclusions made against the sample data are attributed to the population.

The characteristics of the population are coded by the numbers and play the role of random variables. For example, the characteristic of «satisfaction with the life» of the population members can be coded with the scale of ten numbers which is

Ordinal Scale. The question for the characteristic study can be made in the following form:

All things considered, how satisfied are you with your life as a whole these days? 1means you are "completely dissatisfied" and 10 means you are "completely satisfied. Using 10-scale chose your satisfaction with your life as a whole.		
Completely dissatisfied	1 2 3 4 5 6 7 8 9 10	Completely satisfied

Then on the base of the sample respondent answers the distribution of the random variable of «satisfaction with the life» is build and extrapolated on the population. Let us consider the answers of Belarusians about «satisfaction with the life» (picture 5) obtained by the researches in World Values Survey Wave 7: 2017-2020:

- The total number of respondents ***N* = 1 548.**
- The code scale for the random variable $X = \{0,1,2,3,4,5,6,7,8,9,10\}$.
- Number of respondents choosing the x value from the set ***X*** is ***n(x)***, for example $n(9) = 155$ means that 155 members from ***N*** chose 9 as the indicator of their satisfaction with the life.
- The *frequency* of answers indicating the x value from the set X is $p(x)$:

$$p(x) = \frac{n(x)}{N}$$

P(X)={p(x)}: Distribution of the variable X={x}													
	Completely satisfied	→								Completely dissatisfied	Don't know	No answer	Total
Code of the Variable X = {x}	10	9	8	7	6	5	4	3	2	1	0	0	N P
Namber of respondents n(x)	150,156	155	337	320	183	211	79	49,5	22	30,96	6,19	4,644	1548
frequency of the answers p(x)	0,097	0,1	0,2	0,21	0,12	0,14	0,1	0,03	0	0,02	0	0,003	1

Picture 5 − satisfaction with the life of Belarusians:

World Values Survey Wave 7: 2017-2020

Any cultural study which is supposed to use the methods of statistical data analysis requires preliminary construction of a model. For an adequate description of sociocultural processes, such models should have the following basic properties:

1) describe the relationship between the investigated characteristics;

2) determine the influence of external factors on the analyzed characteristics of the studied characteristics;

3) characterize the dynamics of changes in the studied characteristics.

The general model, which possesses the indicated properties, is as follows:

$$y_i = f(x_{i1}, x_{i2}, \dots, x_{iN}; \theta) + \varepsilon_i, i = 1, \overline{N}, \quad (1)$$

where $y_i -$ endogenous (internal) variable, $x_{ij}, j = 1, \overline{n} -$ exogenous (external) variables or observable factors, with known values, $\theta -$ model parameters, $\varepsilon_i -$ random uncontrollable factors leading to random deviations of the endogenous variable y_i from expected values, $N -$ number of analysis units. The objects of the researcher study act as units of analysis. These can be both individual respondents and groups of respondents.

When building a model of the form (1), it is necessary to solve the following problems:

– selection and justification of the type of dependence $f(x, \theta)$, as well as exogenous variables;

– statistical estimation of model parameters θ;

– statistical verification of the adequacy of the constructed model.

The model of the form (1) can be used:

– to analyze the dependence of the endogenous variable on the exogenous variables included in the model;

– to predict the values of the endogenous variable from the given values of the exogenous variables in accordance with the prediction algorithm:

$$y_i = f\left(x_{i1}, x_{i2}, \dots, x_{iN}; \hat{\theta}\right), \quad (2)$$

where $\hat{\theta}$ is a statistical estimate of the model parameters;

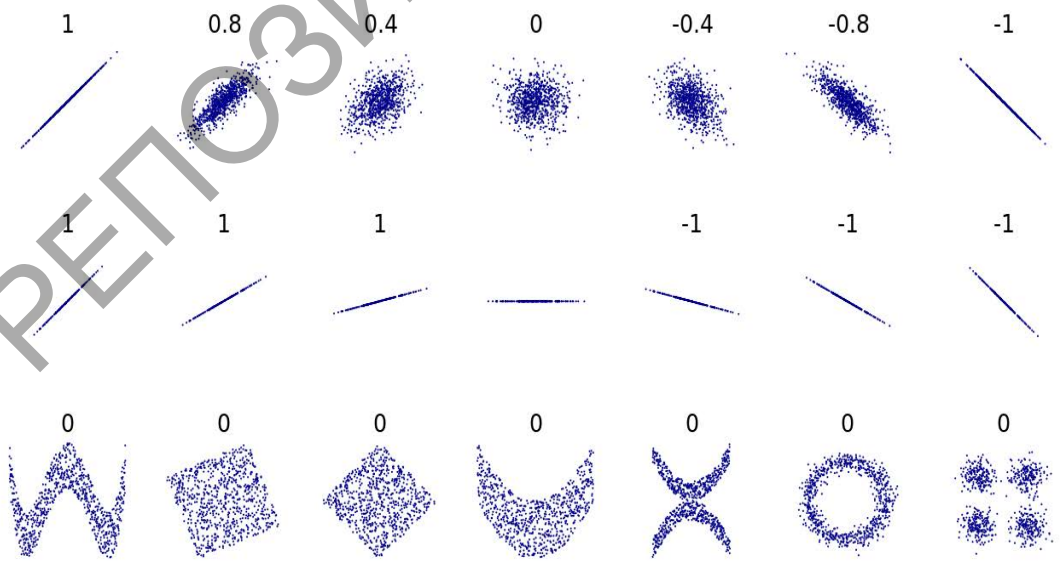
– to select the values of exogenous variables that ensure the achievement of the specified values of the endogenous variable.

To analyze the relationship between socio-cultural characteristics, the methods of correlation and regression analysis are most often used:

Correlation analysis is used to measure the degree of relationship between the traits under study. Having data about these features in the form of pairs of values (x_i, y_i), you can measure this degree using the Pearson correlation coefficient. This coefficient is calculated by the formula

$$r = \frac{\sum_{i=1}^{N}(x_i - \acute{x})(y_i - \acute{y})}{\sqrt{\sum_{i=1}^{N}(x_i - \bar{x})^2}\sqrt{\sum_{i=1}^{N}(y_i - \bar{y})^2}}, \quad (3)$$

Pearson's correlation coefficient takes into account how much the variables *x* and *y* deviate simultaneously from their mean values. Possible values of the correlation coefficient range from 0 to ± 1. When there is a strict linear relationship between the features, the value of r will be +1 in the case of a positive direction of the relationship and -1 in the case of a negative one (picture 6). The correlation reflects the noisiness and direction of a linear relationship, but not the slope of that relationship, nor many aspects of nonlinear relationships.



Picture 6 − The noisiness and direction of a linear and nonlinear relationship

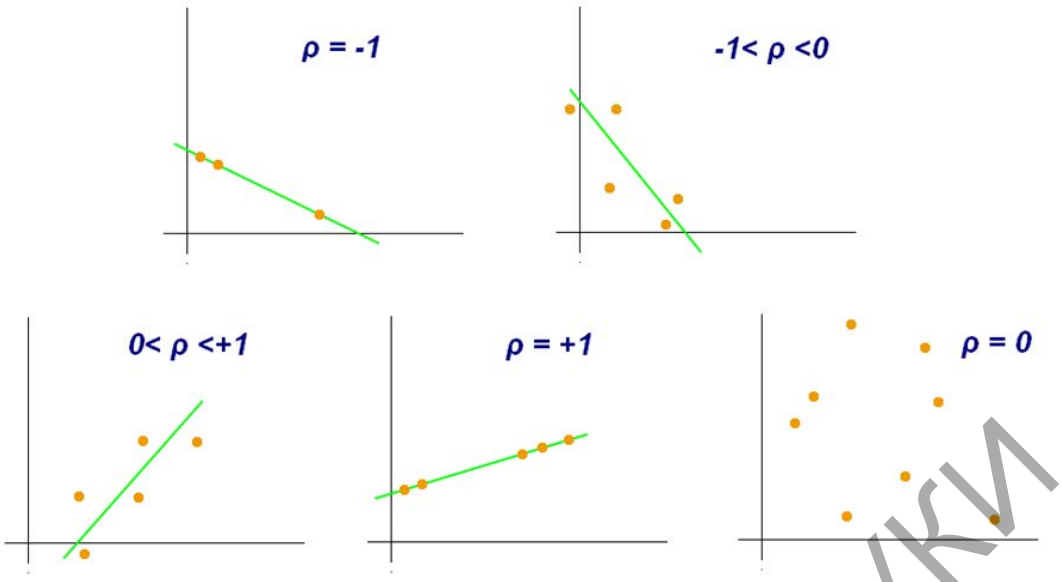
When establishing the closeness of the relationship between sociological data, it is not enough to have information only on the value of the correlation coefficient; one should also determine whether this value is statistically significant. Significance level *r* is the probability of error corresponding to the assumption of nonzero correlation. The statistical significance of the coefficient *r* is determined using the *t*-test:

$$t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}. \quad (4)$$

The resulting value is compared with the critical value at a given level of significance and the number of degrees of freedom N-2. The critical value can be found from the *t*-test distribution table. If *t* exceeds the critical value, then it is concluded that *r* is statistically significant.

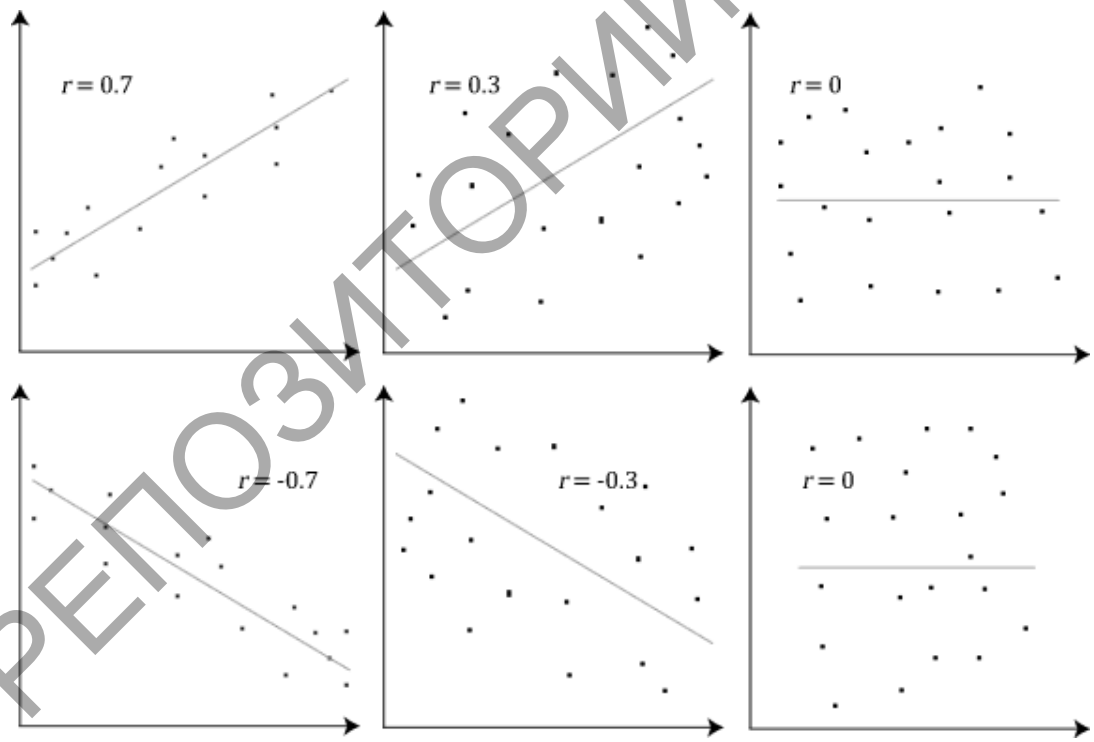
For a verbal description of the value of the coefficient *r*, the following table could be used:

r	**Interpretation**
Less than 0,2	veryweakcorrelation
from 0,2 to 0,5	weakcorrelation
from 0,5 to 0,7	goodcorrelation
from 0,7 to 0,9	highcorrelation
more 0,9	very highcorrelation



Picture 7 – Interpretation of the correlation coefficients

The variables dependence and the correlation coefficients meaning are represented on the pictures 7 and 8.



Picture 7 – The spread of two sets of variables on the coordinate plane and their correlation coefficients

Regression analysis is one of the most sought-after and popular quantitative methods in the social and economic sciences. Paired linear regression is most often used in the analysis of sociological data. With this type of regression, one variable

acts as an exogenous variable, and the model is linear in parameters. Such a model looks like:

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i, i = 1,\acute{N}, \quad (5)$$

where $\beta_0$and β_1 are model parameters, y_i is an endogenous variable, x_i is an exogenous variable, ε_i are random uncontrollable factors.

Building a real data model includes the following tasks:

– estimation of unknown parameters of the model $\beta_0$and $\beta_1$using methods of statistical estimation of parameters from the data y and x;

– checking the adequacy of the model using methods of statistical hypothesis testing;

The choice of certain methods for parameter estimation and hypothesis testing depends on additional assumptions regarding random errors and exogenous variables included in the model.

Assumptions about exogenous variables: exogenous variables are deterministic, that is, the values of the factors *x* are fixed.

Assumptions about random errors:

1) the mathematical expectation of errors is zero:

$$E\{\varepsilon_i\} = 0, i = 1,\acute{N} \quad (6)$$

2) random errors are mutually uncorrelated random variables:

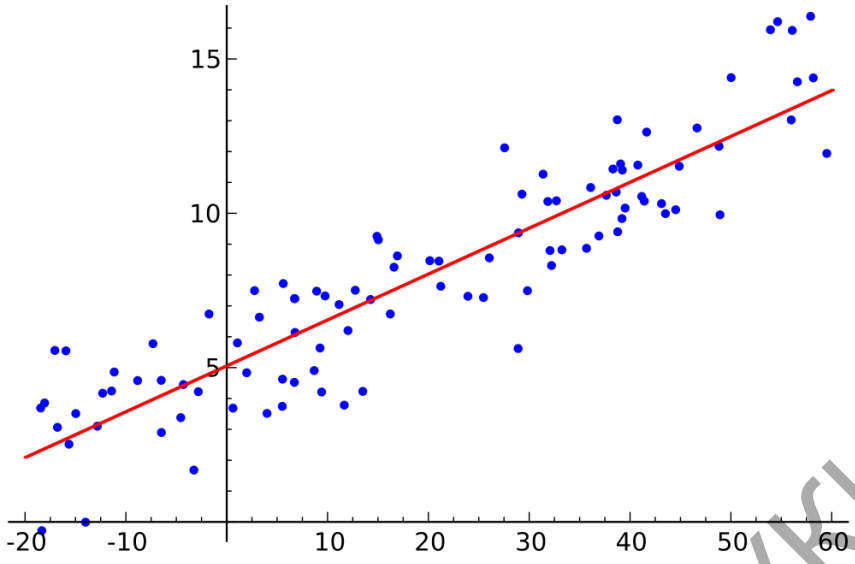
$$cov\{\varepsilon_l, \varepsilon_k\} = 0, l \neq k, l, k = 1,\acute{N} \quad (7)$$

3) the variance of errors has the property of homoscedasticity:

$$D\{\varepsilon_i\} = \sigma^2 < \infty, i = 1,\acute{N} \quad (8)$$

4) random errors have a normal distribution.

Residuals are the result of a large number of different factors, so it is logical to expect that none of these factors should have a greater impact than others. Residuals must be random values and obey the law of normal distribution. This means the following: most of the points should lie close to the regression line (picture 8), and the farther from the line, the fewer points should be.

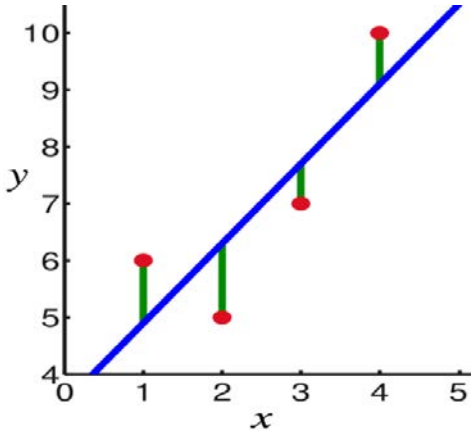


Picture 8 – Regression Line

The method of least squares is used to estimate the parameters of the model. The least squares estimate $\hat{\beta}$ of the vector of parameters β is found from the condition of the minimum sum of squared deviations of the observed values of the endogenous variable from the values determined by the regression function:

$$\sum_{i=1}^{N}(y_i - \beta_0 - \beta_1 x_i)^2 \to min \qquad (9)$$

That is, from the entire set of lines, the regression line on the graph is selected so that the sum of the squares of the distances between the points and this line is minimal.



Picture 9 − Distances between the points and the regression line

The following values are represent the solution of the problem (9)

$$\beta_0 = \acute{y} - \beta_1 \acute{x}, \tag{10}$$

$$\beta_1 = \frac{\frac{1}{N}\sum_{i=1}^{N}(x_i - \acute{x})(y_i - \acute{y})}{\acute{x^2} - \acute{x}^2}, \tag{11}$$

where

$$\acute{x} = \frac{1}{N}\sum_{i=1}^{N} x_i, \qquad \acute{y} = \frac{1}{N}\sum_{i=1}^{N} y_i, \tag{12}$$

A coefficient is significant if there is an enough high probability that its true value is nonzero. To check the significance of the obtained regression coefficients β_0 and β_1, *t*-statistics is used. This value compares the value of the coefficient with its standard error:

$$t(\beta_0) = \frac{\beta_0}{SE(\beta_0)}, t(\beta_1) = \frac{\beta_1}{SE(\beta_1)}, \tag{13}$$

where

$$SE(\beta_0) = \sqrt{\frac{\sum(y - \hat{y})^2}{N-2} \cdot \frac{x^2}{N(x - \acute{x})^2}},$$
$$SE(\beta_1) = \sqrt{\frac{\sum(y - \hat{y})^2}{N-2} \cdot \frac{1}{N(x - \acute{x})^2}} \tag{14}$$

To test the hypothesis that the coefficients of the model are equal to zero, the following ratio criterion is used:

$$\text{hypothesis } H_0 \begin{cases} does\ not\ deviate\ from\ 0, & if |t| < \Delta, \\ deviate\ from\ 0, & if |t| \geq \Delta. \end{cases} \tag{15}$$

If the hypothesis that the regression coefficient is equal to zero is true, then the *t*-statistic in paired linear regression over *N* observations has a *t*-distribution with (*N* – 2) degrees of freedom. In formula in the formula (12) Δ is the critical value of *t*-statistics, it is defined as a quantile of the (1 - ε / 2) level, where ε is the given level of significance.

In addition to establishing the significance of the regression coefficients, it is necessary to determine the significance of the regression equation as a whole. Formula (3) can be represented as:

$$y_i = \hat{y}_i + \varepsilon_i, i = 1,\acute{N}, \quad (16)$$

The first term of this equation is that part of the value of $y_i$for the i-th case, which is explained by the linear influence of x, while ε_i- is the result of all other factors. The first part is the natural part of the y_i value, and the second part is what is explained by obscure reasons. The regression model is better, the more changes in y_i are described by the change in $\hat{y}_i$. This idea prompts the definition of an indicator that would characterize the quality of the regression model from a given perspective. This indicator is the coefficient of determination:

$$R^2 = \frac{\sum_{i=1}^{N}(\acute{y} - \hat{y}_i)^2}{\sum_{i=1}^{N}(y_i - \acute{y})^2}, \quad (17)$$

R^2 values close to 1 may indicate the adequacy of the model. To assess the significance of R^2, the F-statistic is used, which is the ratio of the explained sum of squares per one variable to the unexplained sum of squares per one degree of freedom:

$$F = \frac{R^2}{1 - R^2} \cdot (N - 2). \quad (18)$$

If the hypothesis that $R^2 = 0$ is true, the F-statistic has the Fisher distribution with $(N - 2)$ degrees of freedom. If, for a given significance level ε, the value of F exceeds the F_ε-critical point of the Fisher distribution for a given significance level, then there is reason to reject the hypothesis that $R^2 = 0$.

*Key concepts:*statistical experiment, random value, statistical models, statistical analysis software.

3. PRACTICAL SECTION

3.1 THE ORDER OF THE PRACTICAL WORKS COMPLETING

The *practical section* of the course consists of three parts:

- practical training;
- laboratory training ;
- individual training.

According to the conception of the course all trainings task should be completed in the following order.

Topic 2. Technologies of Cultural and Sociocultural Dimensions

Practical training 1. Modern Models of Cultural Dimensions and parameters (2 hours)

Individual training 1. Hofstede Dimensions Based Cultural Map (2 hours)

Topic 4. Information Technology Approaches to Culture and Cultural Processes Studies

Practical training 2. Internet as a mean of searching research data. Statistical analysis of Internet documents: quantitative analytical-documentary approach (2 hours)

Individual training 2. Analysis of Scientific Publications Accessible in Internet for Clarifying and Planning the Cultural Values Research (2 ours)

Practical training 3. Using Internet Information Resources in Cultural Research Program Development (2 hours)

Individual training 3. Using Internet Information Resources in Cultural Research Program Development (4 hours)

Topic 5. Processing of the Cultural Research Results

Practical training 4. Online surveys (2 hours)

Individual Training 4. Creating the research data base (2 hours)

Practical training 5. Descriptive Statistics (2 hours)

Practical training 6. Presentation of the Scientific Research Results (2 hours)

Laboratory training №1. Pivot tables (2 hours)

Individual Training 5. Creating the research data base (2 hours)

Laboratory training 2. Correlation analysis (2 hours)

Laboratory training 3. Regression analysis (2 hours)

Individual Training 6. Linear regression model (2 hours)

Topic 6. The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information

Laboratory work 4. The use of cloud technologies in cultural studies (2 hours)

Individual Training 7. Disseminating research results (2 hours)

Individual training 8. Interactive presentation (2 hours)

Laboratory work 5. Dissemination of the research results via cloud technologies (2 hours)

Topic 7. Visualization and Presentation of Research Findings

Laboratory work 6. Assessment of the research results presentation (2 hours)

Individual Training 9. Research report creating (2 hours)

3.2PRACTICAL TRAININGISSUES

Topic 2. Technologies of Cultural and Sociocultural Dimensions

(2 hour)

Practical training 1. Modern Models of Cultural Dimensions and their Parameters.

Topic 4. Information Technology Approaches to Culture and Cultural Processes Studies

(4 hour)

Practical training 2. Internet as a mean of searching research data. Statistical analysis of Internet documents: quantitative analytical-documentary approach.

Practical training 3. Using internet information resources in cultural research program development

Topic 5. Processing of the Cultural ResearchResults

(4 hour)

Practical training 4.Online surveys and tools for organizing them.

Practical training 5. Correlation analysis.

Topic 7. Visualization and Presentation of Research Findings(2 hour)

Practicaltraining6. Presentation of the results of scientific research.

3.3PRACTICAL TRAINING TASKS

Topic 2. Technologies of Cultural and Sociocultural Dimensions

Practical training 1. Modern Models of Cultural Dimensions and parameters.

The aim:To study modern models of cultural dimensions and their parameters on the base of the Ingelhart-Wesel cultural model.

Task 1.Perseption of diffrent countries values basing on one own knowledge and experience.

There is a list of countries that participate in the World Values Survey research program and which survey data are presented on the resource https://www.worldvaluessurvey.org/WVSOnline.jsp. Place the countries in four

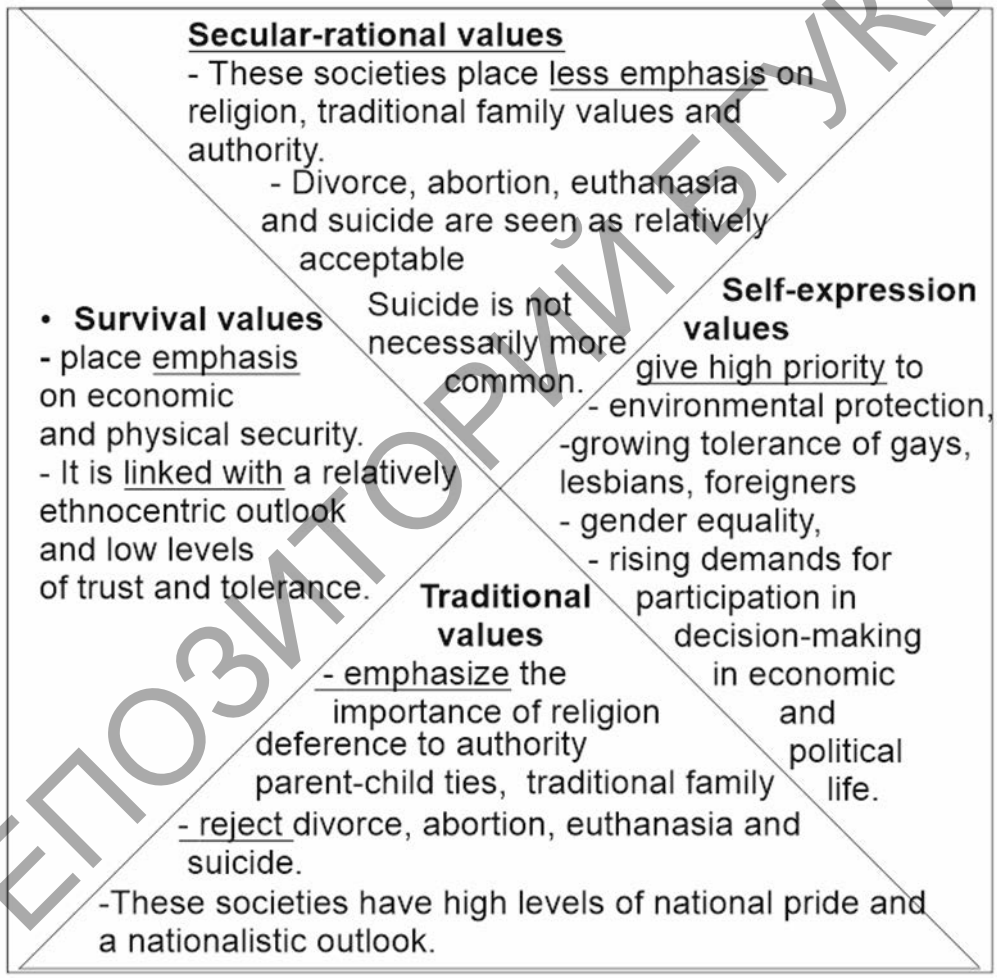
World Values Survey

Albania	Andorra	Argentina	Armenia
Australia	Austria	Azerbaijan	Bangladesh
Belarus	Bolivia	Bosnia and Herzegovina	Brazil
Bulgaria	Colombia	Croatia	Cyprus
Czech Republic	Chile	China	Denmark
Ecuador	Egypt	Estonia	Ethiopia
Finland	France	Georgia	Germany
Germany	Greece	Guatemala	Hong Kong SAR
Hungary	Iceland	Indonesia	Iran
Iraq	Italy	Japan	Jordan
Kazakhstan	Kyrgyzstan	Lebanon	Lithuania
Macau SAR	Malaysia	Mexico	Montenegro
Myanmar	Netherlands	New Zealand	Nicaragua
Nigeria	North Macedonia	Norway	Pakistan
Peru	Philippines	Poland	Portugal
Puerto Rico	Romania	Romania	Russian Federation
Russian Federation	Serbia	Serbia	Slovakia
Slovenia	South Korea	Spain	Sweden
Switzerland	Taiwan ROC	Tajikistan	Thailand
Tunisia	Turkey	Ukraine	United Kingdom
United States	Vietnam	Zimbabwe	

Picture 10 – WorldValuesSurvey

Ingelhart-Wesel model dimentions sectors according to your assumptions. For completing the T*ask* 1 use the form of theTable 3.

Table 3. Ingelhart-Wesel model dimentions



Task 2.Revealing the researcher point of view influence and information environment impact on the hypothesis making.

– Make up the teams of 3-4 students.

– Compare the filled-in forms of the *Task 1* and Define the countries which are placed by the team members in different Ingelhart-Wesel model dimensions sector.

– Discuss why each of the members placed the country in the particular sector.

– Using mobiles find in Internet the information supporting one choice or another. Pay attention on the scientific reliability of the Internet recourses used during the discussion.

– Answer the questions:

1) Do the countries located in a particular sector have common characteristics, such as religious affiliation, geographic location, language groups, economic indicators, political characteristics.

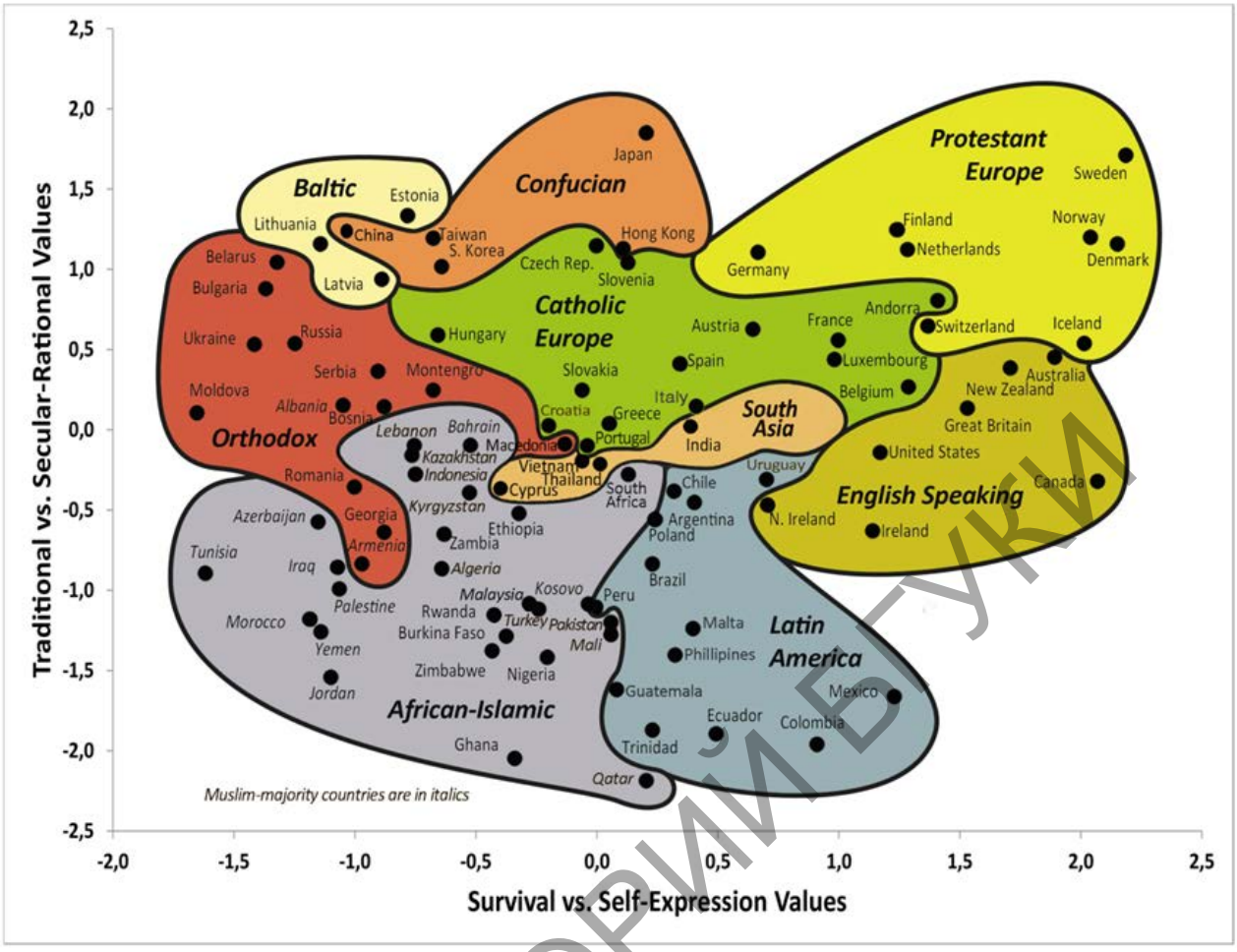
2) In your opinion, do values in cultures change over time? What are the rates of their changes? What factors affect the values changes? How these factors impact on changing values?

Task 3. Reflection on «personal hypotheses versus scientific research results»

– Get to the following Internet link using a mobile:
http://www.worldvaluessurvey.org/WVSContents.js

– Compare filled-in forms of the *Task 1* with the results of Ingelhart and Wesel study depicted on the Cultural Maps of different years (see the picture 11).

– Think about the personal hypotheses and scientific research results. Try to find using reliable scientific sources in Internet the information supported your hypotheses and contradict Ingelhart and Wesel study research conclusions.



Picture 11 − Ingelhart and Wesel Cultural Map(2010- 2014)

Task 4. Reflection on values and beliefs changing

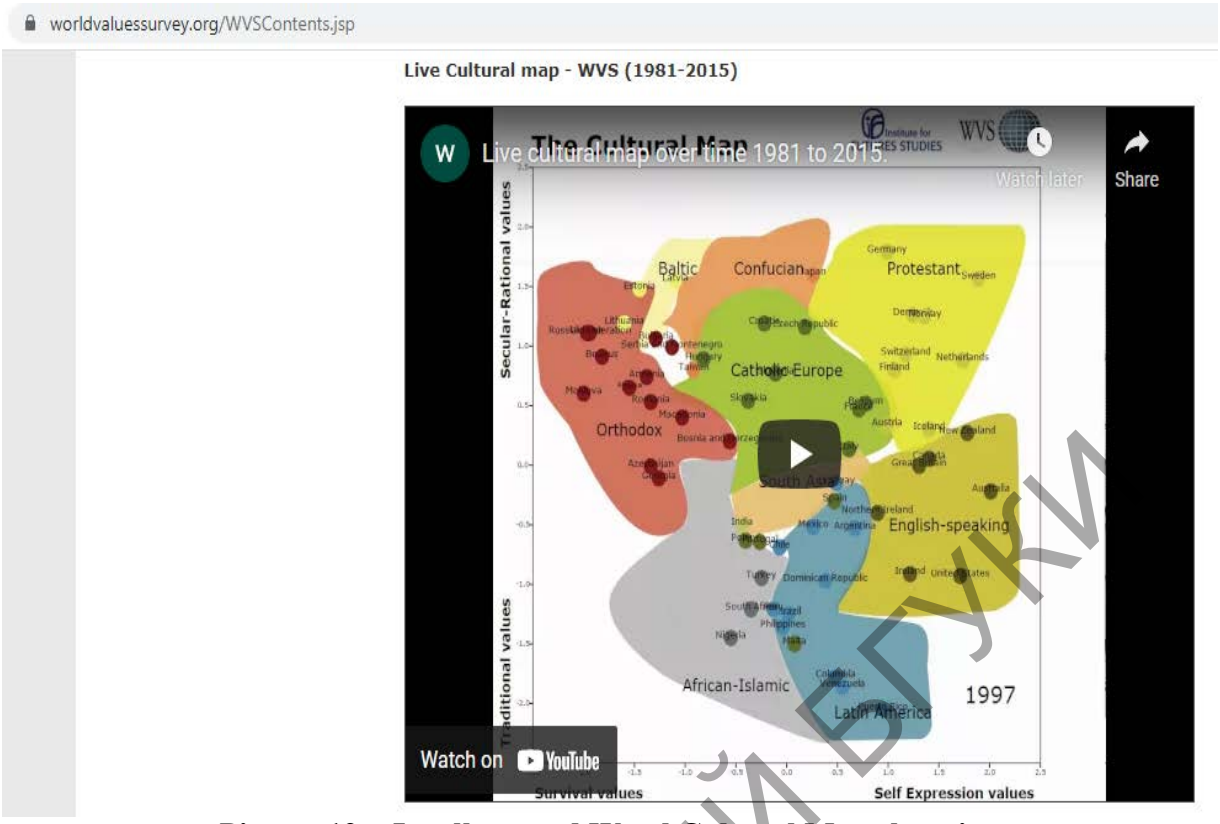
– Watch a video about values and beliefs changes that scientists Ingelhart and Wesel have recorded over the past 30 years (Picture 12):

http://www.worldvaluessurvey.org/WVSContents.jsp

– Answer the questions:

– 1) What factors, in your opinion, influence the values change.

2) What values and are changing globally? In what direction are these values changing.



Picture 12 − Ingelhart and Wesel Cultural Map changing

Task 5. Final discussion: summing up the results and making conclusions

Discuss the research findings, focusing on the following issues:

– Why most of the students have placed certain countries in various sectors? In which sectors the countries placed according to Ingelhart-Wesel research?

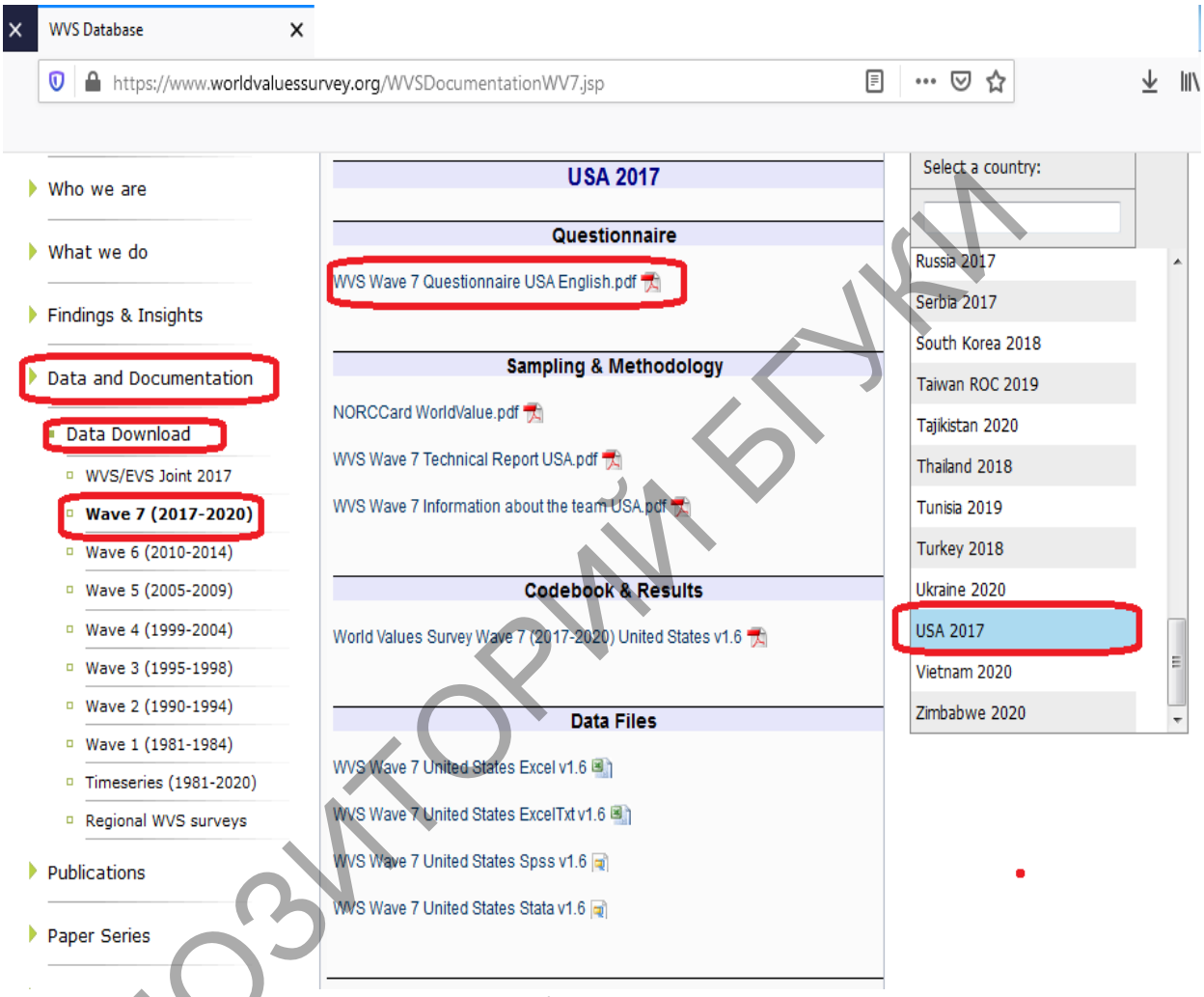
– What is the significance of the observer position in the process of cultural research and what is its influence on the research results interpretation?

Topic4. Information Technology Approaches to Culture and Cultural Processes Studies

Practical training 2. Internet as a mean of searching research data. Statistical analysis of Internet documents: quantitative analytical-documentary approach.

The aim is to study the Internet means for searching research data and approaches to quantitative documentary analysis being helpful for defining the relevant research topic or direction of the research.

Task 1. Preliminary topic of the research based on the World Values Survey



Database

Picture 13 – World Values Survey Wave 7

Get to link http://www.worldvaluessurvey.org/WVSContents.js -> Data and Documentation – Documentation Download. Download the *QUESTIONARY* of the 7th Wave Survey.

Look through the *QUESTIONNAIRE* and define the direction of the research based on the World Values Survey Database.*For Example*

ECONOMIC VALUES

(SHOW CARD 9)

Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. (*Code one number for each issue*):

Q106	Incomes should be made more equal									There should be greater incentives for individual effort
	1	2	3	4	5	6	7	8	9	10
Q107	Private ownership of business and industry should be increased									Government ownership of business and industry should be increased
	1	2	3	4	5	6	7	8	9	10
Q108	Government should take more responsibility to ensure that everyone is provided for									People should take more responsibility to provide for themselves
	1	2	3	4	5	6	7	8	9	10
Q109	Competition is good									Competition is harmful
	1	2	3	4	5	6	7	8	9	10
Q110	In the long run, hard work usually brings a better life									Hard work doesn't generally bring success—it's more a matter of luck and connections
	1	2	3	4	5	6	7	8	9	10

Q111. Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view? (*Read out and code one answer*):

1 Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs.

2 Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent.

3 Other answer (*code if volunteered only!*).

Picture 14 – Economic Values

Task 2. To assess the relevance of the research topic by analyzing Internet documents.

– Using the resources for searching scientific publications presented in Table 2 fulfill the form of Table 3 for quantitative documentary analysis dealt with the preliminary research topic defined in the *Task 1*.

– Assess the relevance of the preliminary research topic by analyzing the results obtained in the filled-in form of the Table 3.

– Answer the question: Is it possible to assess the relevance of the research topic relying only on quantitative analysis.

– Improve the preliminary research topic according to the conclusions of the quantitative analysis and the analysis of the content of the Internet documents.

Table 4. Recourses for searching scientific publications

BOOKS AND PAPERS	
SPRINGER	https://link.springer.com/
SCIENCEDIRECT	https://www.sciencedirect.com
JSTOR	https://www.jstor.org/
RESEARCHGATE	https://www.researchgate.net/about
ACADEMIA	https://www.academia.edu/
PAPERITY	https://paperity.org/
JURN	http://www.jurn.org/#gsc.tab=0
GOOGLE SCHOLAR	https://scholar.google.com/
DISSERTATIONS	
DART-EUROPE	https://www.dart-europe.org/basic-search.php
HAL	https://www.dart-europe.org/basic-search.php
OATD (Open Access Theses and Dissertations)	https://oatd.org/
NDLTD	https://ndltd.org
REFERENCES	
SCOPUS	https://www.scopus.com/
WEB OF SIENCE	http://webofknowledge.com/
WORLDCAT	https://www.worldcat.org/

Table 5. Form for quantitative documentary analysis

<table>
<tr><td></td><td colspan="2">published during the period of last five years</td><td colspan="2">published during the period of last 5 and 20 years ago</td><td colspan="2">published during the period more than 20 years ago</td></tr>
<tr><td></td><td>in free access</td><td>in paid editions</td><td>in free access</td><td>in paid editions</td><td>in free access</td><td>in paid editions</td></tr>
<tr><td rowspan="2">Number of units related to the research topic expressly</td><td>Books__
Papers_
Total__</td><td>Books__
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<tr><td rowspan="2">Number of units related to the research topic implicitly</td><td>Books__
Papers_
_
Total__</td><td>Books__
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<tr><td>Dissertations</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td>Diploma works</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr>
</table>

Topic 4.Information Technologies in Developmentof Cultural Research Plan: steps, principles, methods

Practical training 3. Using Internet InformationResources in Cultural Research Program Development

Theaimisto learn how to use information resources to develop a cultural research program

The research program is a strategic part of the research. It reveals the entire concept and intentions of the researcher. Before drawing up a research program, it is necessary to decide on its topic. It should be narrow and specific. At this stage one should make a bibliographic review, as well as an analysis of all other available information on the research topic. As the result of completing *Practical Training 2* each student is supposed to have the topic of the research already formulated.*Practical Training 3* is focused on the developing the research program.

The research program in the sphere of social and cultural study clearly states the following points:

1. Relevance of the research.

2. Challenges which state the contradiction, for example, between knowledge about some needs of people, the existence of some kind of cultural, social, political, economic, etc. phenomenon /situation and ignorance of the ways, means and approachesto solving the conflicting phenomenonand/or changing the situation.

3. Object of study. This is all that, explicitly or implicitly, contains cultural or/and social contradictions and generates a challenging situation.

4. Subject of study. These are the most significant from a practical and theoretical point of view properties, aspects, features of the object that are subjected to direct study.

5. Determination of the goals and objectives of the study. The structure of goals and objectives should correspond to the main research stages and its final goals.

6. Clarification and interpretation of basic concepts is the process of correlating, explaining, concepts used in research with real manifestations in life, with real events that these concepts reflect. It is important not to allow confusion of an ordinary, commonly used concept with its scientific culturological meaning.

7. Research hypotheses scientifically based assumptions about the structure, relationships and nature of the objects under study. The hypothesis allows the researcher to outline the way out of the challenging situation. There are hypotheses of assumptions, hypotheses-bases and hypotheses-consequences, hypotheses working, descriptive, explanatory, etc. When formulating hypotheses, it is necessary to avoid their obviousness or absurdity.

Task 1.Research planning

- Draw up the 1 − 5 points of the research program based on the results of *Practical Training 2*. Fill in the form of the Table 4.

Task 2. Choosing information resources for conducting research

- Using mobiles browse the following resources and set up their usability for research:

WorldValuesSurvey:

- http://www.worldvaluessurvey.org/WVSContents.jsp;

UNESCO Institute for Statistics:

- http://uis.unesco.org/
- https://apiportal.uis.unesco.org/
- http://data.uis.unesco.org/

WorldBankOpenData

- https://data.worldbank.org/
- http://wdi.worldbank.org/table/
- http://wdi.worldbank.org/table/5.13
- http://wdi.worldbank.org/table/5.12

Google Public Data

https://www.google.com/publicdata/

- Fill the point 12 of the Table 4.

Table6. – Form for the research program.

	RESEARCH PROGRAM	
1.	Relevanceoftheresearch	
2.	Challenges	
3.	Objectofstudy	
4.	Subjectofstudy	
5.	Goals and objectives of the study	
6.	Basic concepts	
7.	Researchhypotheses	
8.	Studyplan	
9.	Researchstages	
10.	Research means and approaches	
11.	Planned results and conclusions of the study	
12.	Information resources for conducting research	

Topic 5. Processing of the Cultural Research Results

Practical training 4. Online surveys

The aim is to learn main principles rules and tools for creating online surveys

Task 1. Design the Questionnaire for Research Survey

- Based on the *Research Program* developed in *Practical Training 2* and *Practical Training 3* and *Individual training 3* develop the *Questionnaire* for survey.
- Include in the Questionnaire the questions related to your research topic from the QUESTIONNAIRE of *World Values Survey* including 4 questions with 10-scale answers.

See the *Example* bellow

Table 7 – the Questionnaire for Research Survey

Research Topic: The Influence of Economic Values on Well-being Perception and Forming Future Social Values		
Q1	Age of respondent	
Q2	Sex	1-male, 2-female
Q3	Country	
Q4	Region of the country	
Q5	Mother language	
Q6	Taking all things together, would you say you are (read out and code one answer):	1 Very happy 2 Rather happy 3 Not very happy 4 Not at all happy
Q7	All in all, how would you describe your state of health these days? Would you say it is… (read out):	1 Very good 2 Good 3 Fair 4 Poor 5 Very poor

Q8	Comparing your standard of living with your parents' standard of living when they were about your age, would you say that you are better off, worse off or about the same?		1. Better off, 2. Worse off, 3. Or about the same
Q9	Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "no choice at all" and 10 means "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life turns out		
	No choice at all	1 2 3 4 5 6 7 8 9 10	A great deal of choice
Q10	All things considered, how satisfied are you with your life as a whole these days? 1means you are "completely dissatisfied" and 10 means you are "completely satisfied. Using 10-scale chose your satisfaction with your life as a whole.		
	Completely dissatisfied	1 2 3 4 5 6 7 8 9 10	Completely satisfied
Q11	How satisfied are you with the financial situation of your household?		
	Completely dissatisfied	1 2 3 4 5 6 7 8 9 10	Completely satisfied
Q12	Place your views on the 10-scale. If you agree completely with the statement chose 10, 1 means you completely disagree with the statement, and if your views fall somewhere in between, you can choose any number in between.		
	Incomes should be made more equal	1 2 3 4 5 6 7 8 9 10	There should be greater incentives for individual effort
Q13	Private ownership	1 2 3 4 5 6 7 8 9 10	Government

	of business and industry should be increased		ownership of business and industry should be increased
Q14	Government should take more responsibility to ensure that everyone is provided for	1 2 3 4 5 6 7 8 9 10	People should take more responsibility to provide for themselves
Q15	Competitionisgood	1 2 3 4 5 6 7 8 9 10	Competition is harmful
Q16	In the long run, hard work usually brings a better life	1 2 3 4 5 6 7 8 9 10	Hard work doesn't generally bring success— it's more a matter of luck and connections

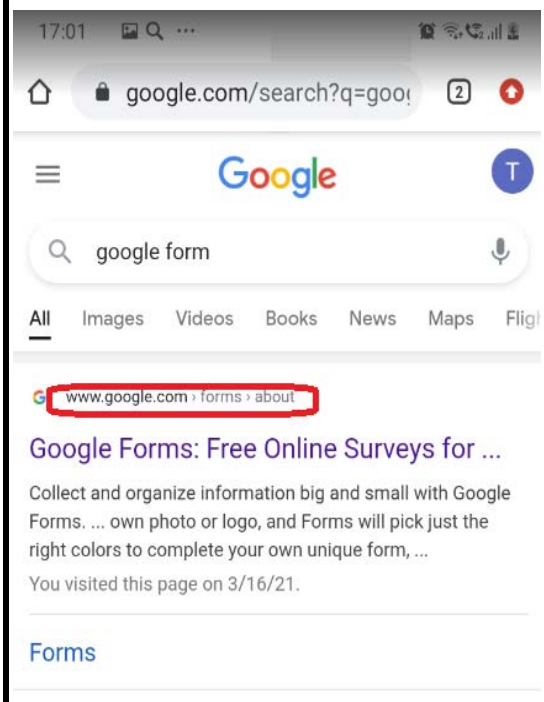
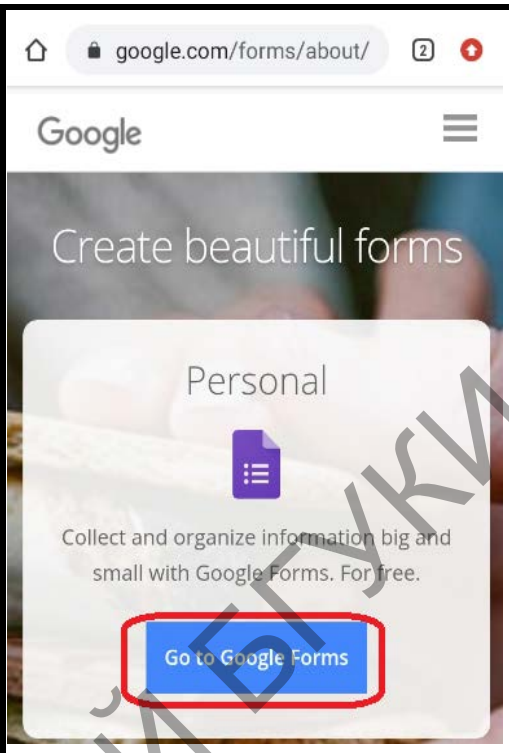
	In the last 12 months, how often have your or your family…?	**Often**	**Sometimes**	**Rarely**	**Never**
Q17	Gone without enough food to eat	1	2	3	4
Q18	Felt unsafe from crime in your home	1	2	3	4
Q19	Gone without medicine or medical treatment that you needed	1	2	3	4
Q20	Gone without a cash income	1	2	3	4
Q21	Gone without a safe shelter over your head	1	2	3	4

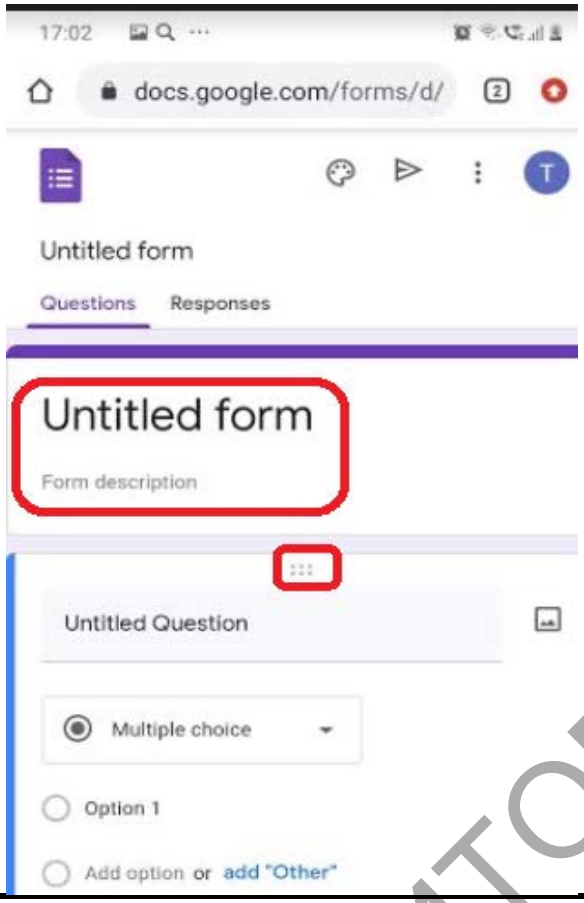
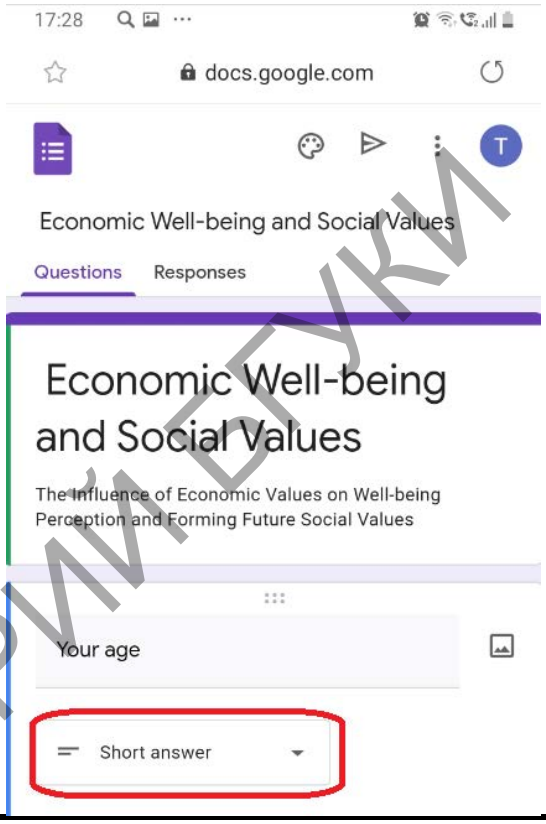
	Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five!	Mentioned	Not mentioned
Q22	Independence	1	2
Q23	Hard work	1	2
Q24	Feeling of responsibility	1	2
Q25	Imagination	1	2
Q26	Tolerance and respect for other people	1	2
Q27	Thrift, saving money and things	1	2
Q28	Determination, perseverance	1	2
Q29	Religious faith	1	2
Q30	Not being selfish	1	2
Q31	Obedience	1	2

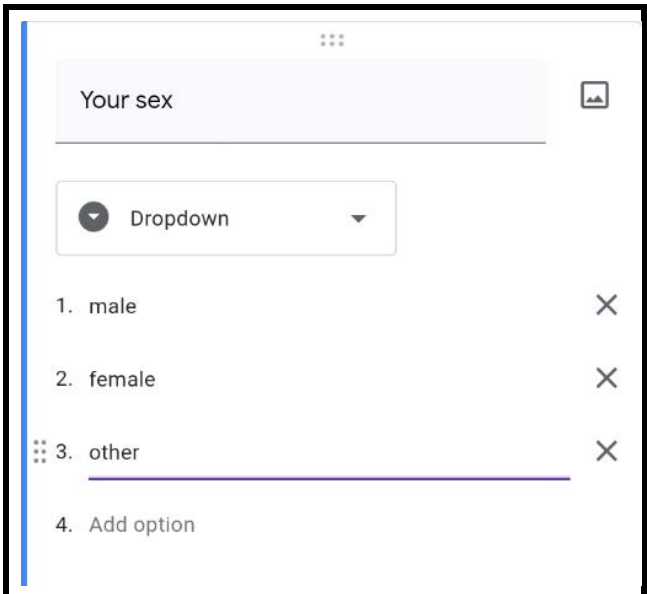
Task 2. *Creating electronic questionnaire survey form.*

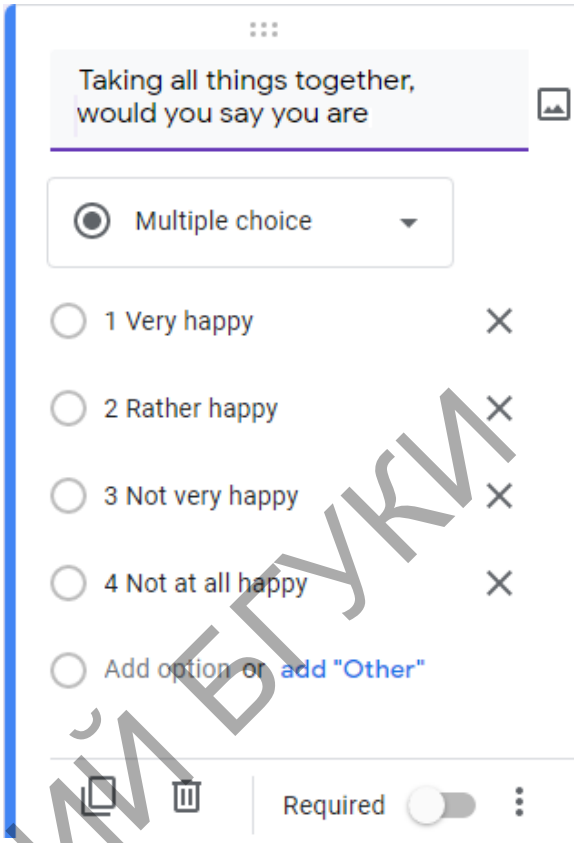
- Install on your mobiles Google Drive and Excel Software (if you don't have).
- Create Google account (if you don't have).
- *Create Google Form* for Survey following instructions bellow. Pay attention on using the appropriate Google Form toolsfor designing the questions forms:
    - *Short answer text model*
    - *Drop Down model*
    - *Linear Scale model*
    - *Options model*

Table 8 – the Questionnaire for Research Survey with Social Media

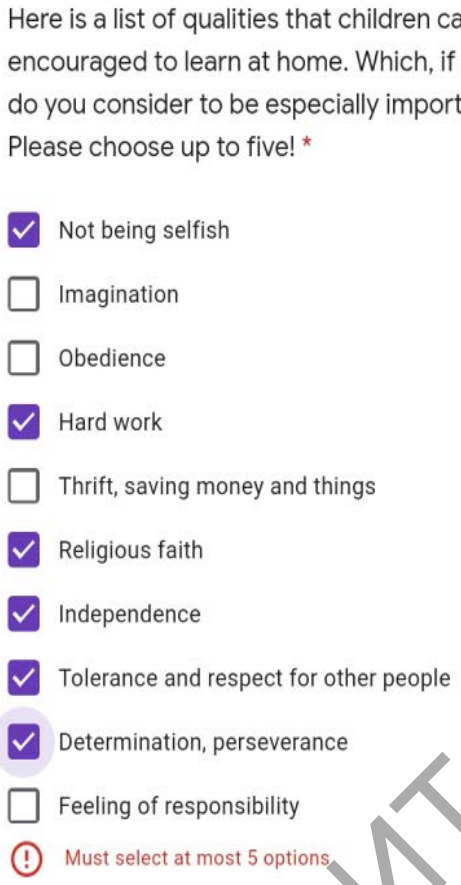
1. Open the *Blank Form*	 

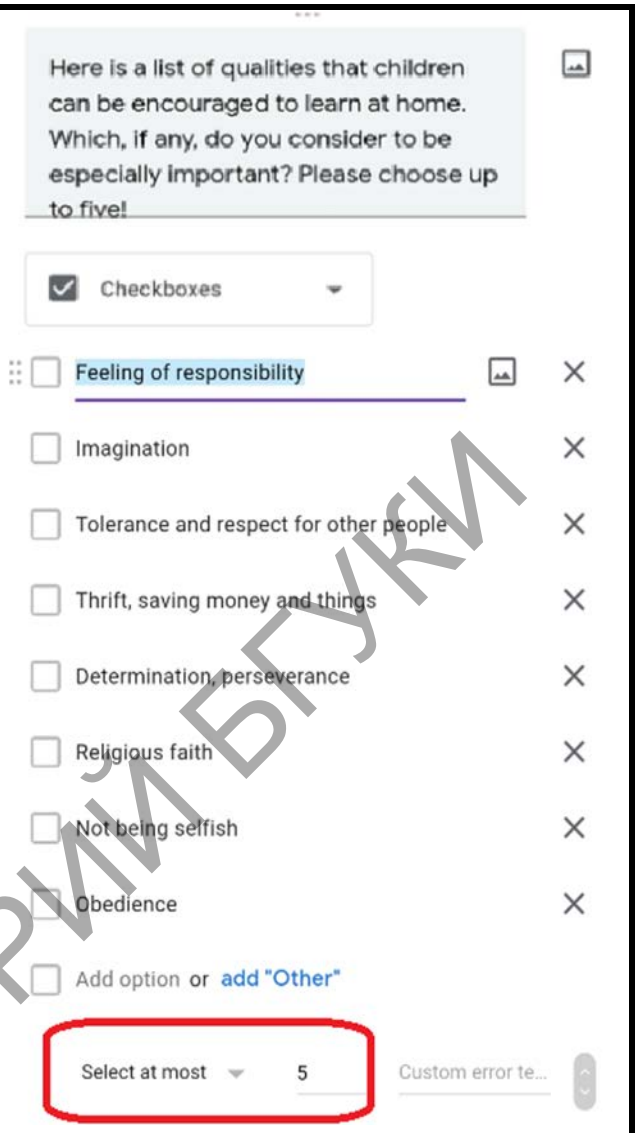
2. Fill the name of the research and its description in the «*Form description field*» and start to design *Questions*. 	3. Use the *Short answer text* model for the personal questions which need the respondent to fill text information as Q1, Q3 - Q5 in the *Example*. 
4. Usethe *Drop Downmodel* for the questions which have the only choice from no more than 5 options as Q2,	5. Use *Multiple Choice Options* for questions which have the only choice from no more than 5 options as Q6 – Q8, Q17 – Q21.



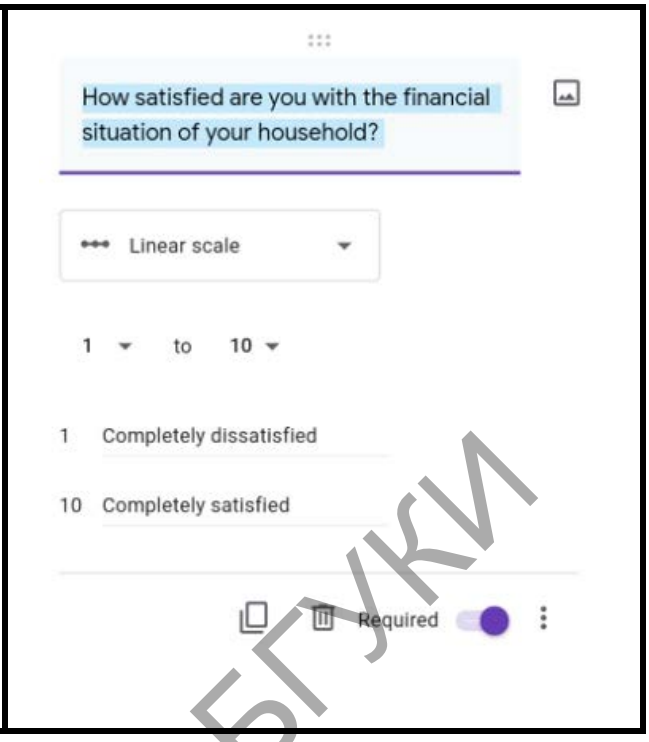


6. Use *Checkboxes* which have more than one option choice from the set of questions as Q22 – Q29 in the *Example*.



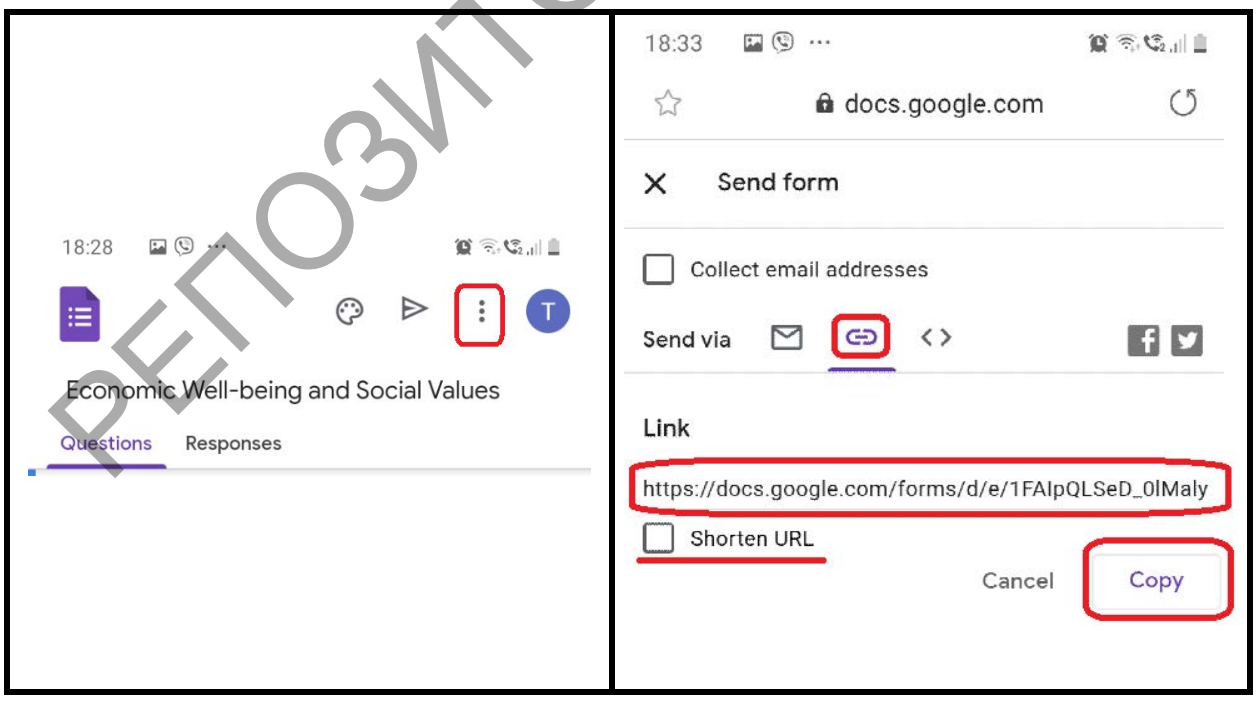


7. Use the *Linear Scale* model for the questions which have 10- scale choice as Q9 – Q16 in the *Example*.



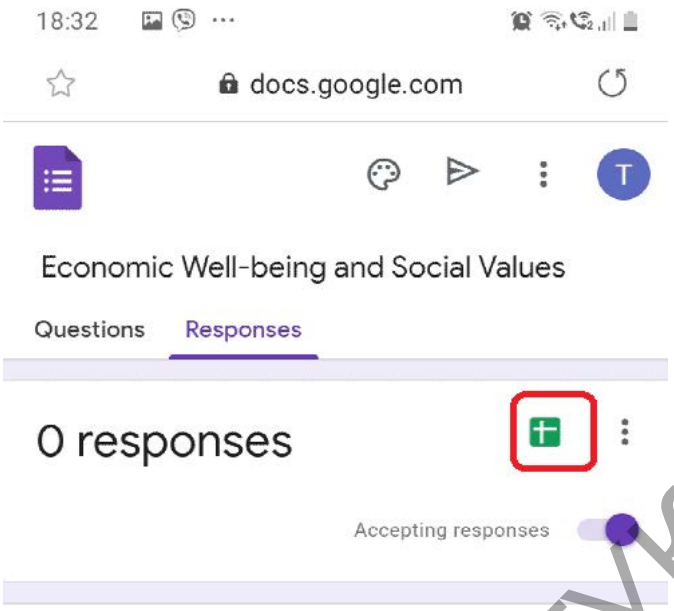
Task 3.CollectingSurvey data via Social Medea

•Post the link to the *Survey Form,* created in the *Task 2* in your *Social Media Groups*



Picture 15 – The link to the Survey Form

•Pay attention that all the responses are recorded in the *Google Drive Excel File*



Picture 16 − Writing responses to an Excel file in Google Drive

Practical training 5. Descriptive Statistics

The aim is to learn main principles of using descriptive statistics in cultural studies

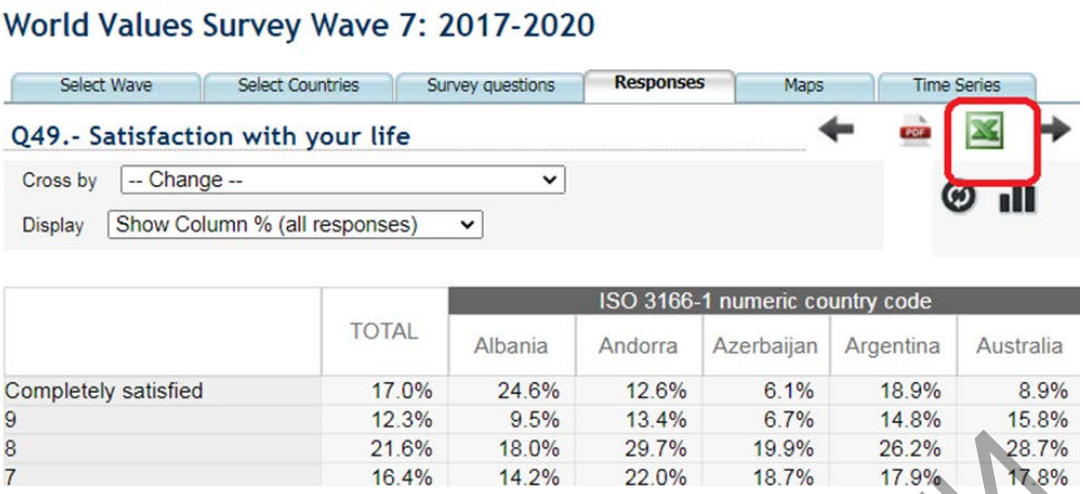
Note that all the tasks are supposed to be competed with mobiles.

Task 1. Calculating descriptive statistics values

- *From Research Data Base* (which is built as the result of the *Individual Training 4* and stored on *Google Drive)* take the data related to the answers on the tow *10-scale questions* of your research, including those which are taken from the *QUESTIONNAIRE* of the *World Values Survey*. Select the data related to the people from your own country.
- Using *Excel* program on your mobile calculate the descriptive statistics for the selected data.
- Analyze and interpret the descriptive statistics values.
- Discuss the results with your partner.

Task 2. *Descriptive statistics based comparative analyses*

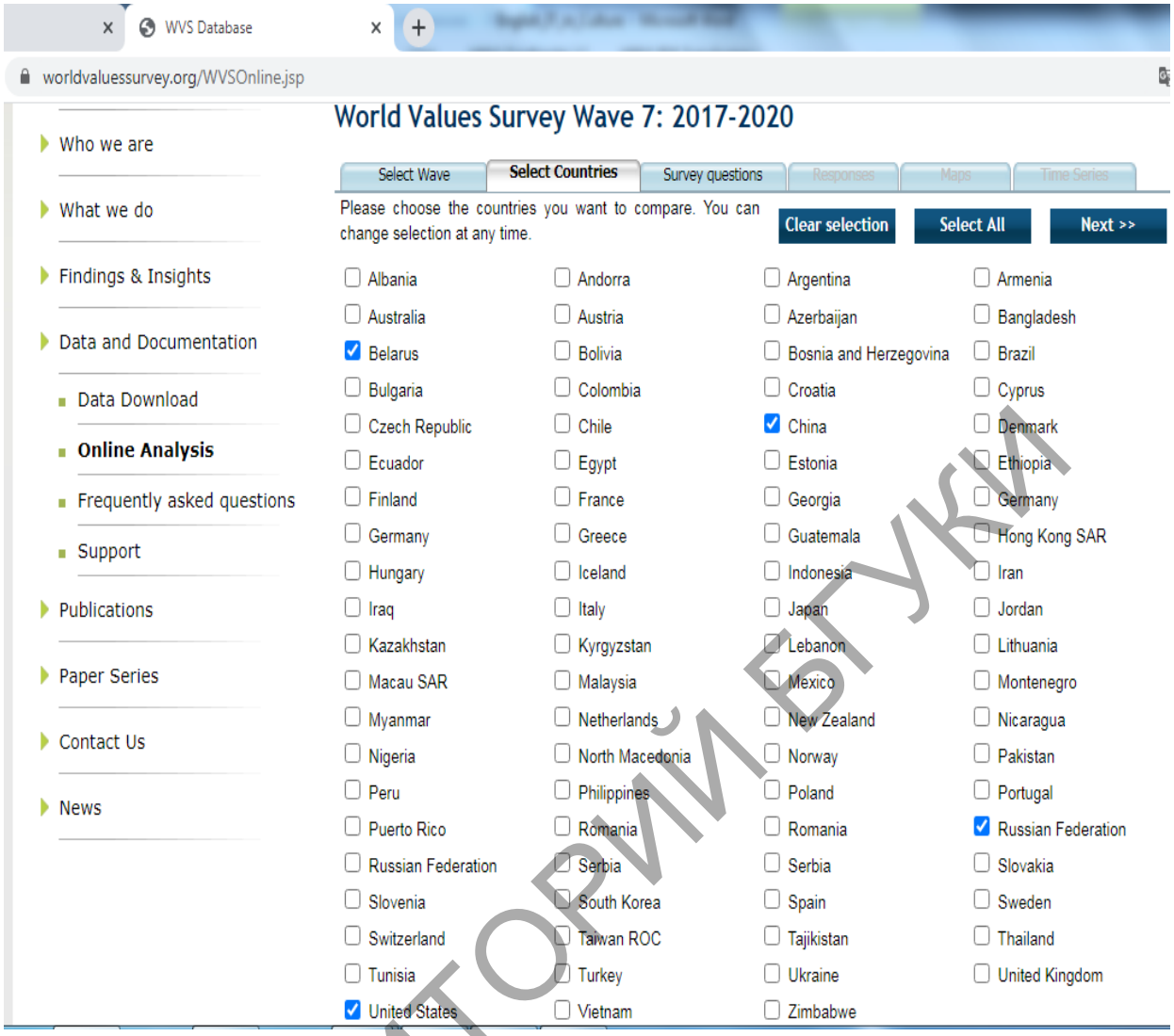
- Usingthe *Online Analysis* tool of the *World Values Survey Internet Site* build the *Excel File* with descriptive statistics related to the answers on the questions which are studied in the *Task 1* concerned your *Home Country* andthen for the 3 countries which you interested in.



	TOTAL	ISO 3166-1 numeric country code				
		Albania	Andorra	Azerbaijan	Argentina	Australia
Completely satisfied	17.0%	24.6%	12.6%	6.1%	18.9%	8.9%
9	12.3%	9.5%	13.4%	6.7%	14.8%	15.8%
8	21.6%	18.0%	29.7%	19.9%	26.2%	28.7%
7	16.4%	14.2%	22.0%	18.7%	17.9%	17.8%

Picture 17 − Comparison of countries

- Compare the results obtained via *Social Media Groups* with those from the*World Values Survey* for your *Home Country*. Explain the differences of the descriptive statistics values, if there are.
- Compare the results obtained via *Online Analysis tool of the World Values Survey Internet Site* for your *Home Country* with those for countries you have chosen. Try to prove the differences of the descriptive statistics by the cultural differences of the countries.
- Discuss the results with your partner.



Picture 18 – Comparison of countrieswith Online Analysis

Topic 7. Visualization and Presentation of Research Findings

Practical training 6. Presentation of the Scientific Research Results

The aim is to study the main principles and information technology tools in presenting the scientific research results

Task 1. Analyzing the Ted presentations.

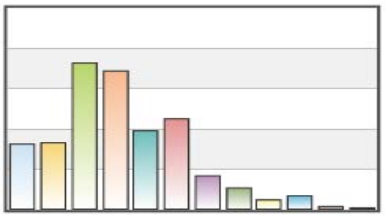
- Watch two videos with *Ted Presentations:*

1) «Are China and the US doomed to conflict» by Kevin Rudd
https://www.ted.com/talks/kevin_rudd_are_china_and_the_us_doomed_to_conflict#t-2901

2) «Behind the Great Firewall of China?» by Michael Anti (Jing Zhao)
https://www.ted.com/talks/michael_anti_behind_the_great_firewall_of_china

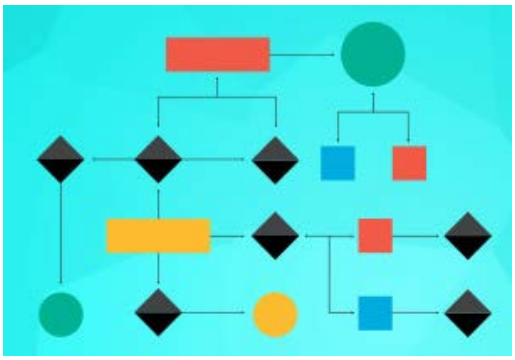
- Pay attention on the means of data visualization. Look through the following form indicating the visualization tools. Assert the effectiveness of the tools (from your own point of view as the listener) used in two presentations proposed in this task.

Table 9 – The Visualizationof data

<table>
<tr><th colspan="2">DATA VISUALIZATION TOOLS</th></tr>
<tr><td>Text visualization carried out with pictures and photos supporting the text
 
<table><tr><td>-1</td><td>Not used but needed</td></tr><tr><td>1</td><td>Not used and not needed</td></tr><tr><td>2</td><td>satisfying</td></tr><tr><td>3</td><td>good</td></tr></table></td><td>Diagrams are used for demonstrating similarities and differences in characteristics
 
<table><tr><td>-1</td><td>Not used but needed</td></tr><tr><td>1</td><td>Not used and not needed</td></tr><tr><td>2</td><td>satisfying</td></tr><tr><td>3</td><td>good</td></tr></table></td></tr>
</table>

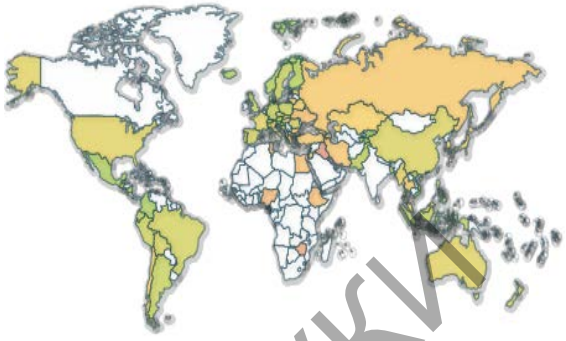
4	excellent		4	excellent	

Flowcharts are intended for graphical presentation of algorithms



-1	Not used but needed
1	Not used and not needed
2	satisfying
3	good
4	excellent

Maps convey social, demographic and geographic information

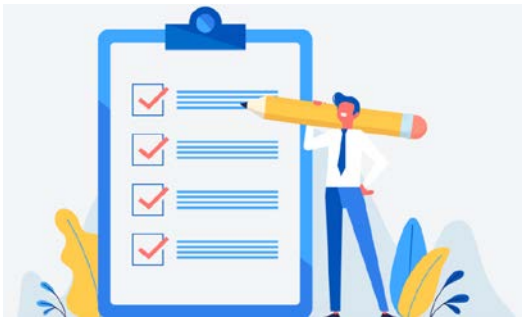


-1	Not used but needed
1	Not used and not needed
2	satisfying
3	good
4	excellent

Time series visualize time periods

-1	Not used but needed
1	Not used and not needed
2	satisfying
3	good
4	excellent

Bulleted or numbered lists make rules and checklists easier to read



-1	Not used but needed
1	Not used and not needed
2	satisfying
3	good
4	excellent

Dashboard intended for data analysis and its visualization including the on-line visualization	Infographics data visualization with graphic elements
	

-1	Not used but needed
1	Not used and not needed
2	satisfying
3	good
4	excellent

-1	Not used but needed
1	Not used and not needed
2	satisfying
3	good
4	excellent

- Discuss the results with your partner.

Task 2. *Sketch of thePresentationVisual Support*

- On the paper make a sketch Sketch for your Reseach Presentation Visual Support paying attention on the *DATA VISUALIZATION TOOLS* discussed in the previous task.
- Discuss the Sketch with your partner. Improve it according to the partner advises.

3.4LABORATORY TRAINING TOPICS

Topic5. Processing of the Cultural Research Results

(6ours)

Laboratory training №1. Pivot tables

Laboratory training №2. Correlation analysis

Individual Training 3. Regression analysis

Topic 6. The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information

(4 ours)

Laboratory work 4. The use of cloud technologies in cultural studies

Laboratory work 5. Dissemination of the research results via cloud technologies

Topic 7. Visualization and Presentation of Research Findings

(2 ours)

Laboratory work 6. Assessment of the research results presentation

3.5 LABORATORY TRAINING TASKS

Тема 5. Processing of the Cultural Research Results

Laboratory training 1. Pivot tables

The aim is to study the methods of data analysis via the pivot tables.

A pivot table is a table of statistics that summarizes the data of a more extensive table (such as from a database, spreadsheet, or business intelligence program). This summary might include sums, averages, or other statistics, which the pivot table groups together in a meaningful way.

World Values Survey Wave 6: 2010-2014
Satisfaction with financial situation of household

	TOTAL	Age		
		Up to 29	30-49	50 and more
Mean(China)	6,19	6,17	6,21	6,17
Mean(Belarus)	4,78	5,23	4,73	4,56

Picture 19 − A Pivot Table of Statistics

Pivot tables are a technique in data processing. They arrange and rearrange (or "pivot") statistics in order to draw attention to useful information. This leads to finding figures and facts quickly making them integral to data analysis. This ultimately leads to helping businesses or individuals make educated decisions.

Task 1. Pivot table creating

•From the 2017-2020 WAVE QUESTIONARY of World Values Survey chose the questions concerning parenting values.

•Using the data from *Pivot Tables* obtained with *World Values Survey On-line Analysis* tool create in Excel a *Pivot Table* indicating the dynamics ofthe parenting

values changesin four countries including your home country(http://www.worldvaluessurvey.org). Mind to use the *Age Filter* for determining the values dynamics.

•On the basis of the data obtained, draw conclusions about the change of certain values in the studied countries. Compare the cultural characteristics of the countries.

Task 2. Pivot table analysis

- Chose a 10-scale question from the 2017-2020 WAVE QUESTIONARY of World Values Survey from your research topic. In Excel Create the Pivot Table for four countries indicating the studded value dynamic basing on the *Mean*for each country in different World Values Survey Waves periods.
- Create different types of histograms for each country basing on the Pivot Table data.
- Analyze the results.

Laboratory training 2. Correlation analysis

The aim is to learn how to apply correlation analysis to study the relationship between two factors.

Task 1. Calculating the correlation coefficients

- Study the questions of 2017-2020 WAVE QUESTIONARY of World Values Survey with 10-point scale.
- Choose 8 the most interesting questions.
- Formulate hypotheses about the relationship of the factors indicated by the selected questions.
- Test hypotheses calculating correlation coefficients.

Task 2. Correlation analysis

- Look through your research questions. Make hypocrisies on the factors relationships.
- Check the hypocrisies using the correlation coefficients.
- Analyze the results.

Example.

Consider two questions from *World Values Survey Questionnaire 2017-2020.*

(SHOW CARD 5)

Q49. All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole? (*Code one number*):

Completely dissatisfied									Completely satisfied
1	2	3	4	5	6	7	8	9	10

(SHOW CARD 6)

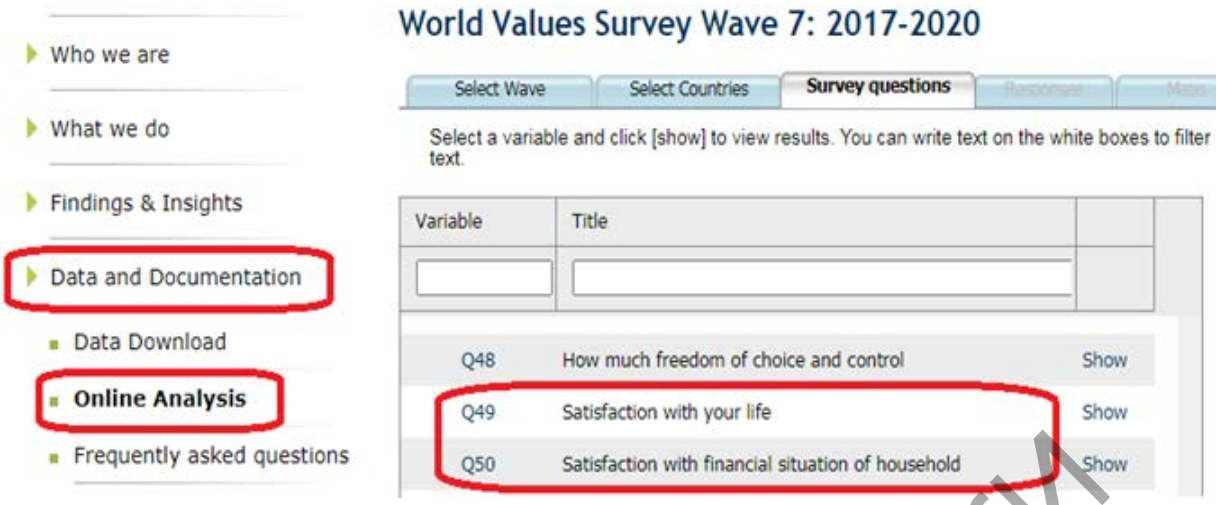
Q50. How satisfied are you with the financial situation of your household? Please use this card again to help with your answer (*code one number*):

Completely dissatisfied									Completely satisfied
1	2	3	4	5	6	7	8	9	10

Picture 20 − TheQuestions from the World Values Survey 2017-2020 Questionnaire

The questions concerned with two factors «satisfaction with the life» and «satisfaction with the financial situation of the household». The hypothesis is that satisfaction with the financial situation of the household«influence»satisfaction with the life. The first thing we need to check is correlation between two factors.

Step 1. Select the data for analysis.



Picture 21 − TheQuestions from the World Values Survey 2017-2020 Questionnaire Online Analysis

Collect the data in Excel file.

World Values Survey Wave 7: 2017-2020

Select Wave | Select Countries | Survey questions | Responses | Maps | Time Series

Q49.- Satisfaction with your life

Cross by -- Change --

Display Show Column % (all responses)

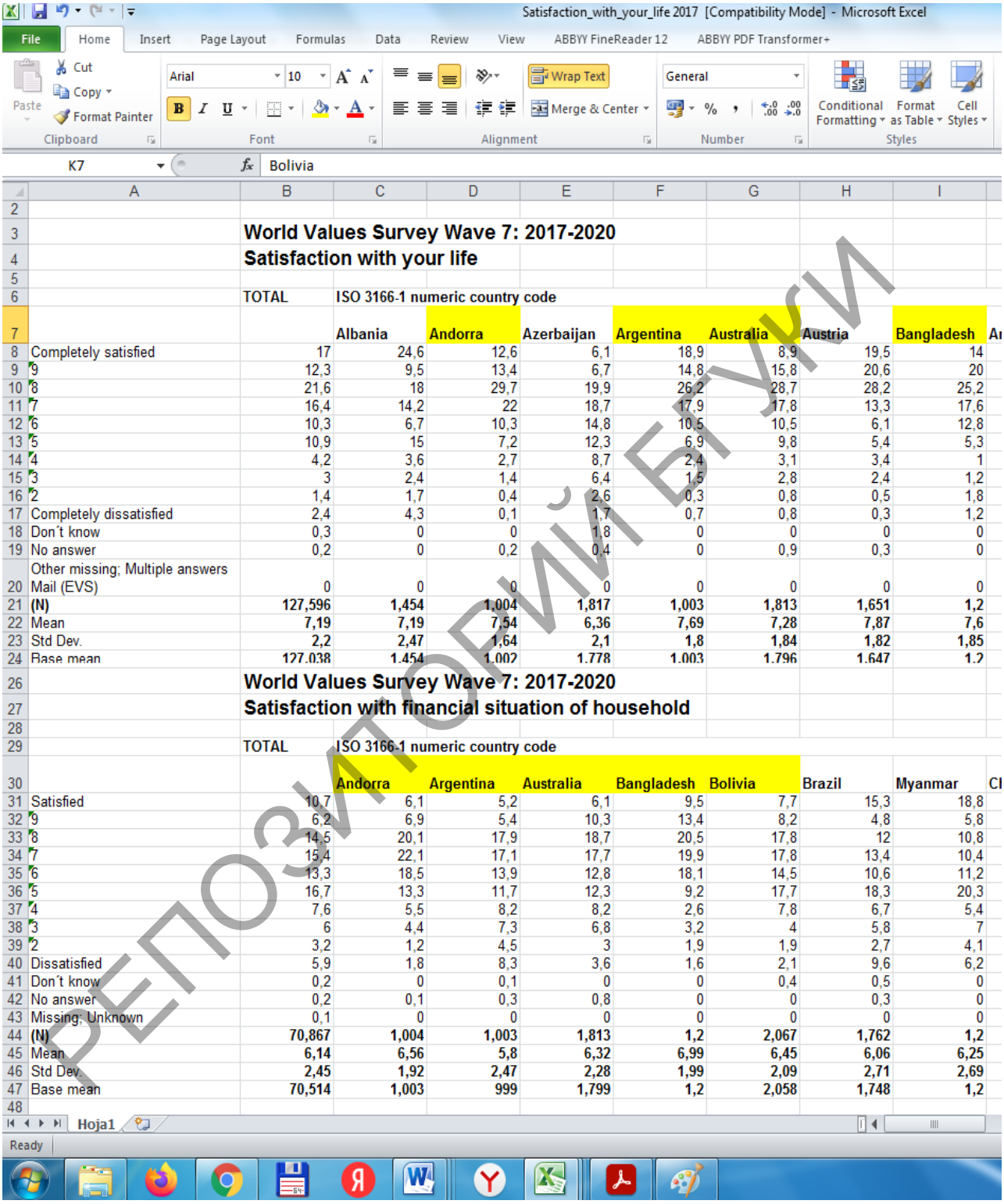
	TOTAL	ISO 3166-1 numeric country code				
		Albania	Andorra	Azerbaijan	Argentina	Australia
Completely satisfied	17.0%	24.6%	12.6%	6.1%	18.9%	8.9%
9	12.3%	9.5%	13.4%	6.7%	14.8%	15.8%
8	21.6%	18.0%	29.7%	19.9%	26.2%	28.7%
7	16.4%	14.2%	22.0%	18.7%	17.9%	17.8%
6	10.3%	6.7%	10.3%	14.8%	10.5%	10.5%
5	10.9%	15.0%	7.2%	12.3%	6.9%	9.8%
4	4.2%	3.6%	2.7%	8.7%	2.4%	3.1%
3	3.0%	2.4%	1.4%	6.4%	1.5%	2.8%
2	1.4%	1.7%	0.4%	2.6%	0.3%	0.8%
Completely dissatisfied	2.4%	4.3%	0.1%	1.7%	0.7%	0.8%
Don´t know	0.3%	-	-	1.8%	-	-
No answer	0.2%	-	0.2%	0.4%	-	0.9%
Other missing; Multiple answers Mail (EVS)	0.0%	-	-	-	-	-
(N)	(127,596)	(1,454)	(1,004)	(1,817)	(1,003)	(1,813)
Mean	7.19	7.19	7.54	6.36	7.69	7.28
Std Dev.	2.20	2.47	1.64	2.10	1.80	1.84
Base mean	(127,038)	(1,454)	(1,002)	(1,778)	(1,003)	(1,796)

Picture 22 − The Online Analysis tool of the World Values Survey

Step 2. Prepare Excel file for the analysis.

Collect the all data in one file.

Chose the data only fre the same countries.

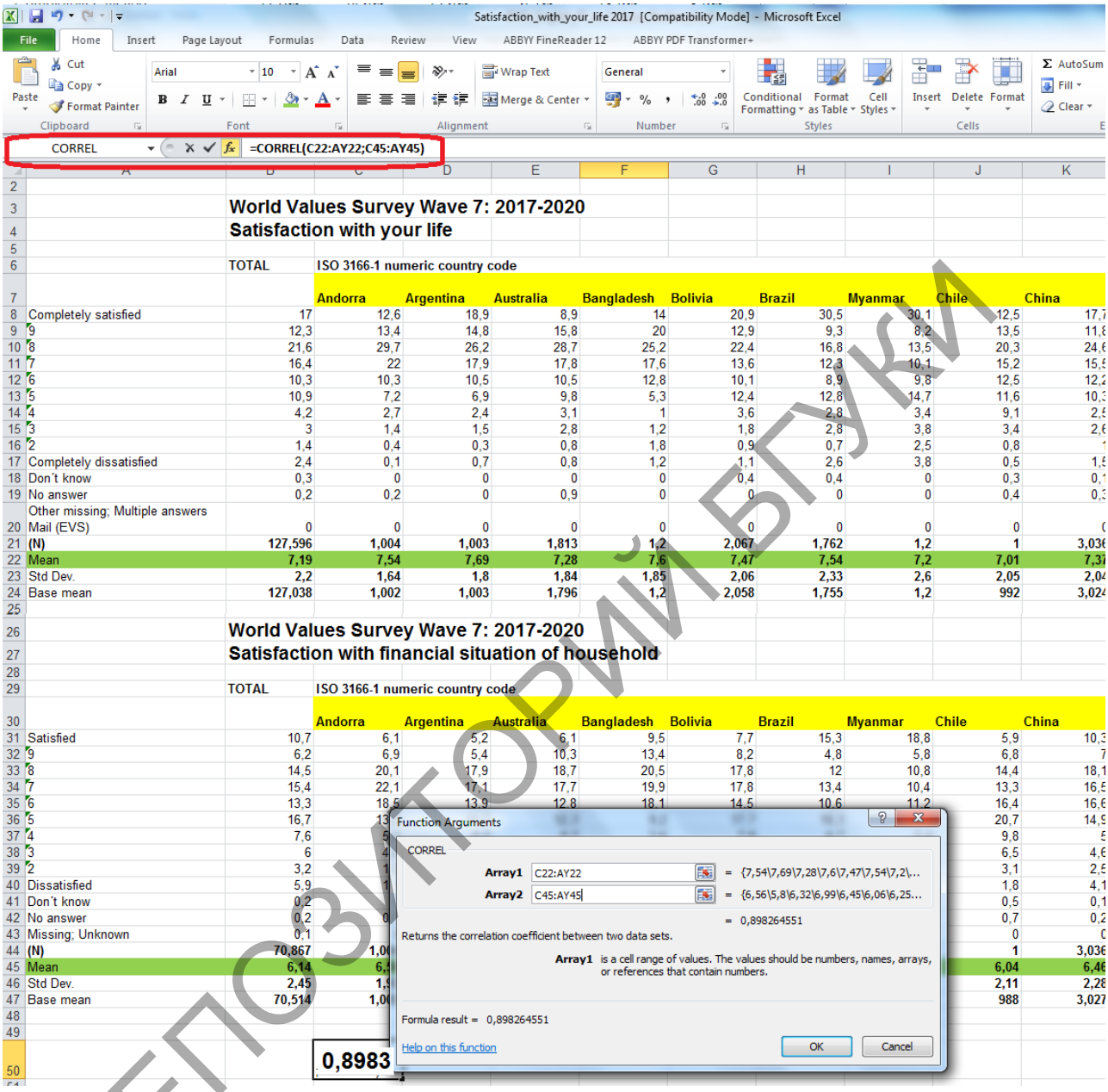


Satisfaction_with_your_life 2017 [Compatibility Mode] - Microsoft Excel

	A	B	C	D	E	F	G	H	I
3		**World Values Survey Wave 7: 2017-2020**							
4		**Satisfaction with your life**							
6		TOTAL	ISO 3166-1 numeric country code						
7			Albania	Andorra	Azerbaijan	Argentina	Australia	Austria	Bangladesh
8	Completely satisfied	17	24,6	12,6	6,1	18,9	8,9	19,5	14
9	9	12,3	9,5	13,4	6,7	14,8	15,8	20,6	20
10	8	21,6	18	29,7	19,9	26,2	28,7	28,2	25,2
11	7	16,4	14,2	22	18,7	17,9	17,8	13,3	17,6
12	6	10,3	6,7	10,3	14,8	10,5	10,5	6,1	12,8
13	5	10,9	15	7,2	12,3	6,9	9,8	5,4	5,3
14	4	4,2	3,6	2,7	8,7	2,4	3,1	3,4	1
15	3	3	2,4	1,4	6,4	1,5	2,8	2,4	1,2
16	2	1,4	1,7	0,4	2,6	0,3	0,8	0,5	1,8
17	Completely dissatisfied	2,4	4,3	0,1	1,7	0,7	0,8	0,3	1,2
18	Don't know	0,3	0	0	1,8	0	0	0	0
19	No answer	0,2	0	0,2	0,4	0	0,9	0,3	0
20	Other missing; Multiple answers Mail (EVS)	0	0	0	0	0	0	0	0
21	**(N)**	**127,596**	**1,454**	**1,004**	**1,817**	**1,003**	**1,813**	**1,651**	**1,2**
22	Mean	**7,19**	**7,19**	**7,54**	**6,36**	**7,69**	**7,28**	**7,87**	**7,6**
23	Std Dev.	**2,2**	**2,47**	**1,64**	**2,1**	**1,8**	**1,84**	**1,82**	**1,85**
24	Base mean	**127,038**	**1,454**	**1,002**	**1,778**	**1,003**	**1,796**	**1,647**	**1,2**
26		**World Values Survey Wave 7: 2017-2020**							
27		**Satisfaction with financial situation of household**							
29		TOTAL	ISO 3166-1 numeric country code						
30			Andorra	Argentina	Australia	Bangladesh	Bolivia	Brazil	Myanmar
31	Satisfied	10,7	6,1	5,2	6,1	9,5	7,7	15,3	18,8
32	9	6,2	6,9	5,4	10,3	13,4	8,2	4,8	5,8
33	8	14,5	20,1	17,9	18,7	20,5	17,8	12	10,8
34	7	15,4	22,1	17,1	17,7	19,9	17,8	13,4	10,4
35	6	13,3	18,5	13,9	12,8	18,1	14,5	10,6	11,2
36	5	16,7	13,3	11,7	12,3	9,2	17,7	18,3	20,3
37	4	7,6	5,5	8,2	8,2	2,6	7,8	6,7	5,4
38	3	6	4,4	7,3	6,8	3,2	4	5,8	7
39	2	3,2	1,2	4,5	3	1,9	1,9	2,7	4,1
40	Dissatisfied	5,9	1,8	8,3	3,6	1,6	2,1	9,6	6,2
41	Don't know	0,2	0	0,1	0	0	0,4	0,5	0
42	No answer	0,2	0,1	0,3	0,8	0	0	0,3	0
43	Missing; Unknown	0,1	0	0	0	0	0	0	0
44	**(N)**	**70,867**	**1,004**	**1,003**	**1,813**	**1,2**	**2,067**	**1,762**	**1,2**
45	Mean	**6,14**	**6,56**	**5,8**	**6,32**	**6,99**	**6,45**	**6,06**	**6,25**
46	Std Dev.	**2,45**	**1,92**	**2,47**	**2,28**	**1,99**	**2,09**	**2,71**	**2,69**
47	Base mean	**70,514**	**1,003**	**999**	**1,799**	**1,2**	**2,058**	**1,748**	**1,2**

Picture 23 – The Online Analysis tool of the World Values Survey in the Excel File

Step 2. Calculate correlation using the Mean Values of two factors under consideration.



Picture 24 − The Calculate correlation

The correlation coefficient is 0.89, which is close to 1. This means that the result of correlation analysis supports our hypothesis, but we can't state that it proves hypothesis.

Laboratory training 3. Regression analysis

The aim is to learn how to apply the methods of regression analysis in cultural studies.

Task 1. Clusters

- Form clusters of countries from the ones represented in the project World Values Survey http://www.worldvaluessurvey.org analyzing their:

- geographical position,
- dominant religion,
- social and political blocs of the 20th century,
- others.

Examples of clusters for statistical research:

I. Muslim World

Countries of the Arab world: Algeria, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Qatar, Tunisia, Egypt, Yemen.

Muslim Asia: Kazakhstan, Kyrgyzstan, Uzbekistan.

Turkic-speaking Muslim countries: Azerbaijan and Turkey.

II. Europe

Eastern Europe - Orthodox countries: Belarus, Russian Federation, Ukraine, Romania, Armenia, Georgia.

Eastern Europe - Catholic countries: Poland, Estonia, Slovenia.

Western Europe: Germany, Netherlands, Sweden, Spain, Cyprus.

III. Atlantic

Spainidad: Brazil, Chile, Colombia, Argentina, Mexico, Peru, Trinidad and Tobago, Uruguay, Ecuador.

English-speaking: USA, New Zealand, Australia.

IV. Asia

Eastern: China, Taiwan, Hong Kong, Japan, South Korea, Malaysia, Philippines, Singapore, Thailand.

South: India, Pakistan.

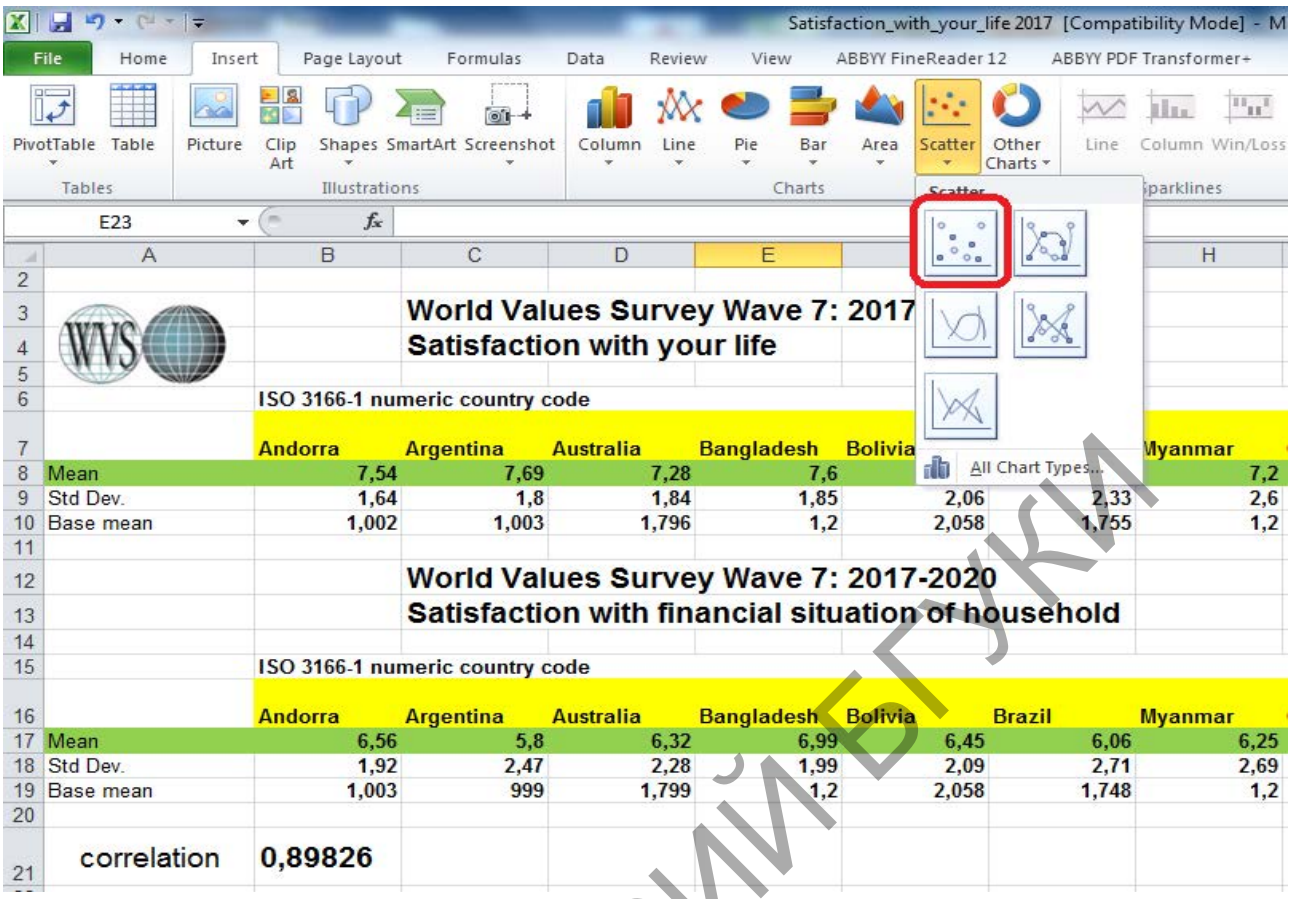
V. Africa

Ghana, Nigeria, Rwanda, South Africa, Zimbabwe.

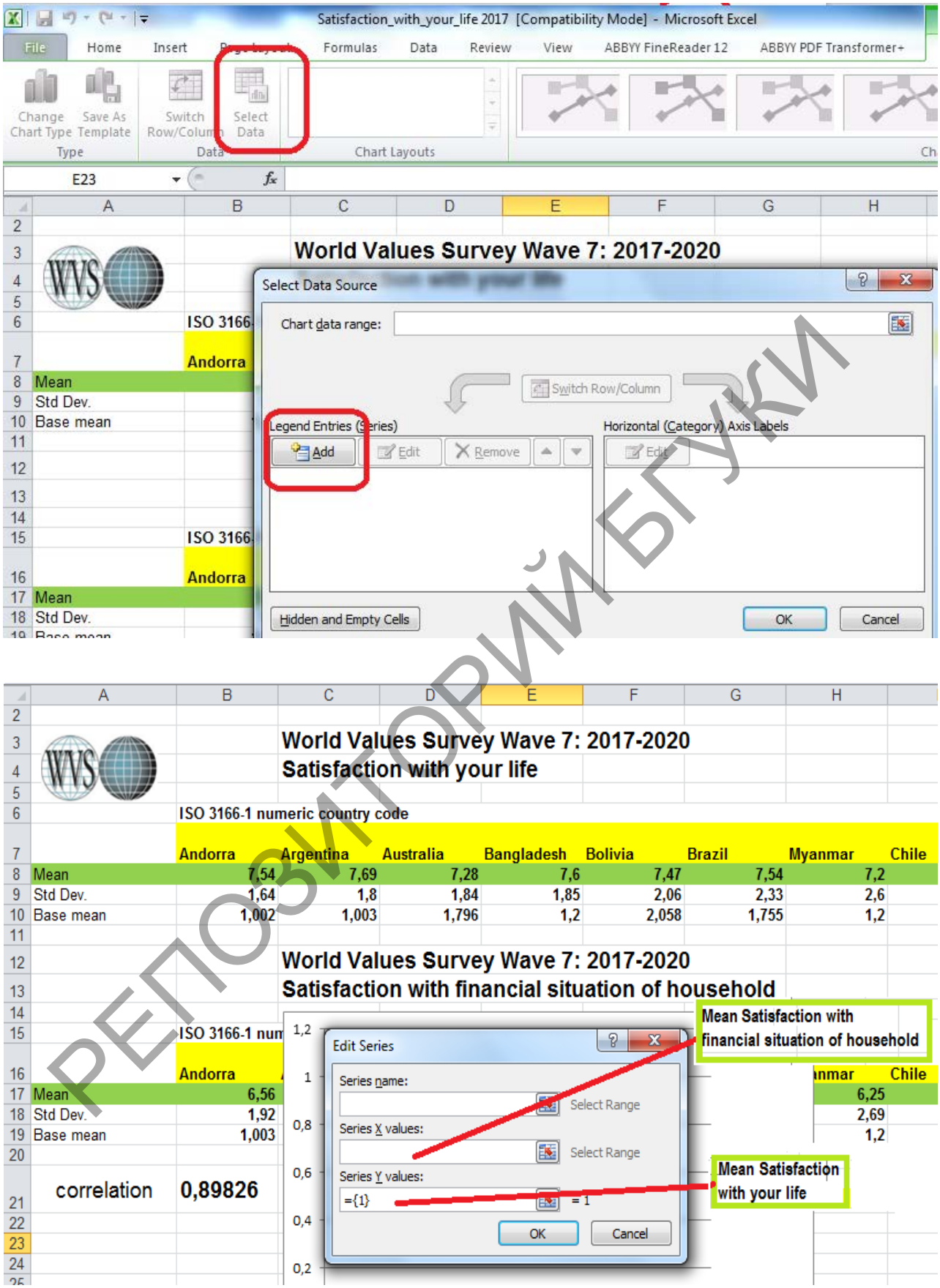
Task 2. Creating linear regression model

- Chose one of the clusters of countries which are created as the result of the Task 1. Calculate the correlation coefficient between the frequency of choosing each parenting value and financial satisfaction of the household for the countries of the selected cluster.
- Chose the factors with high correlation coefficient and build the linear regression models in Excell.
- Give an interpretation of the results obtained.

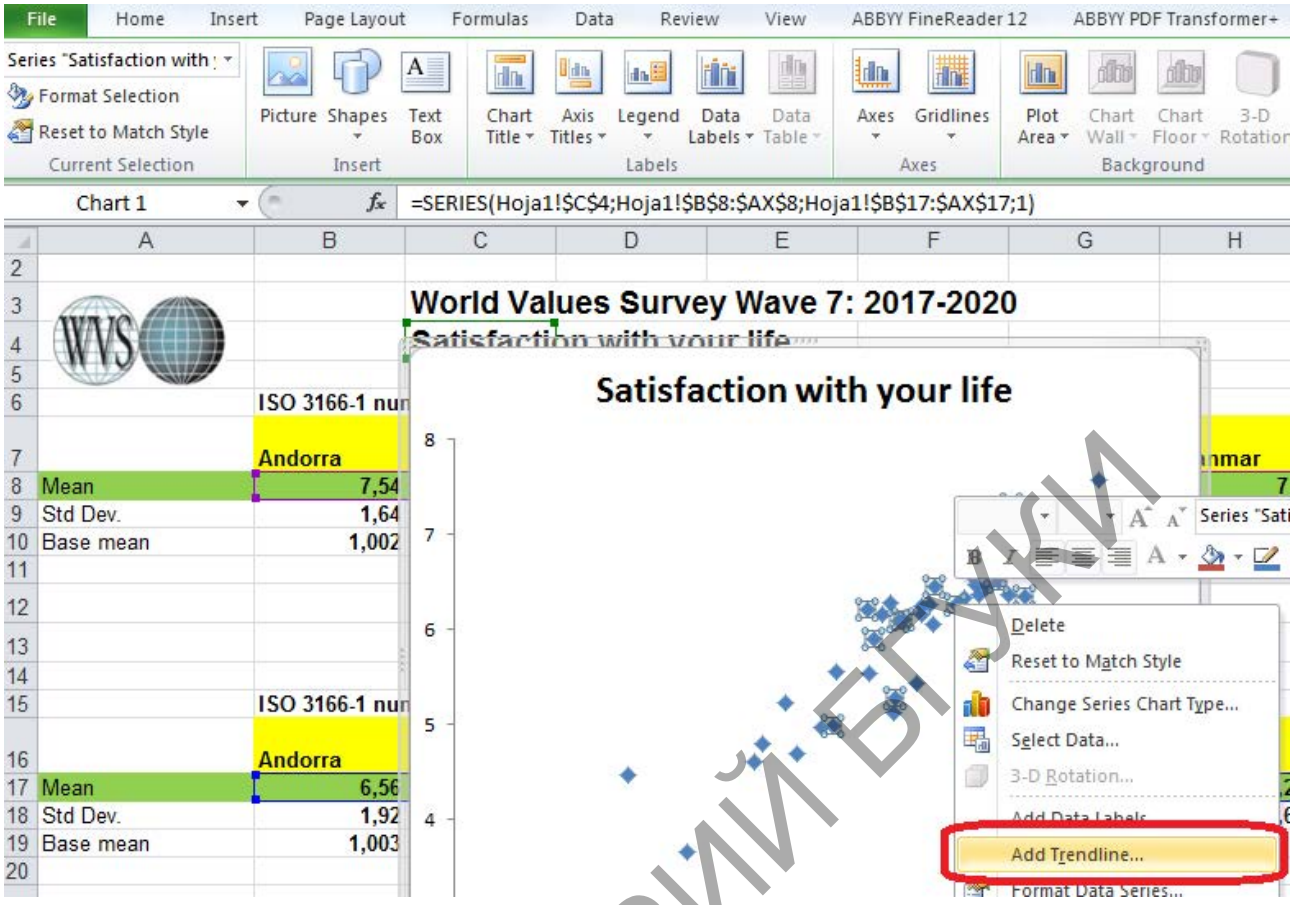
Example on haw to build the linear regression in Excel (Picture 25, Picture 26, Picture 27, Picture 28, Picture 29).



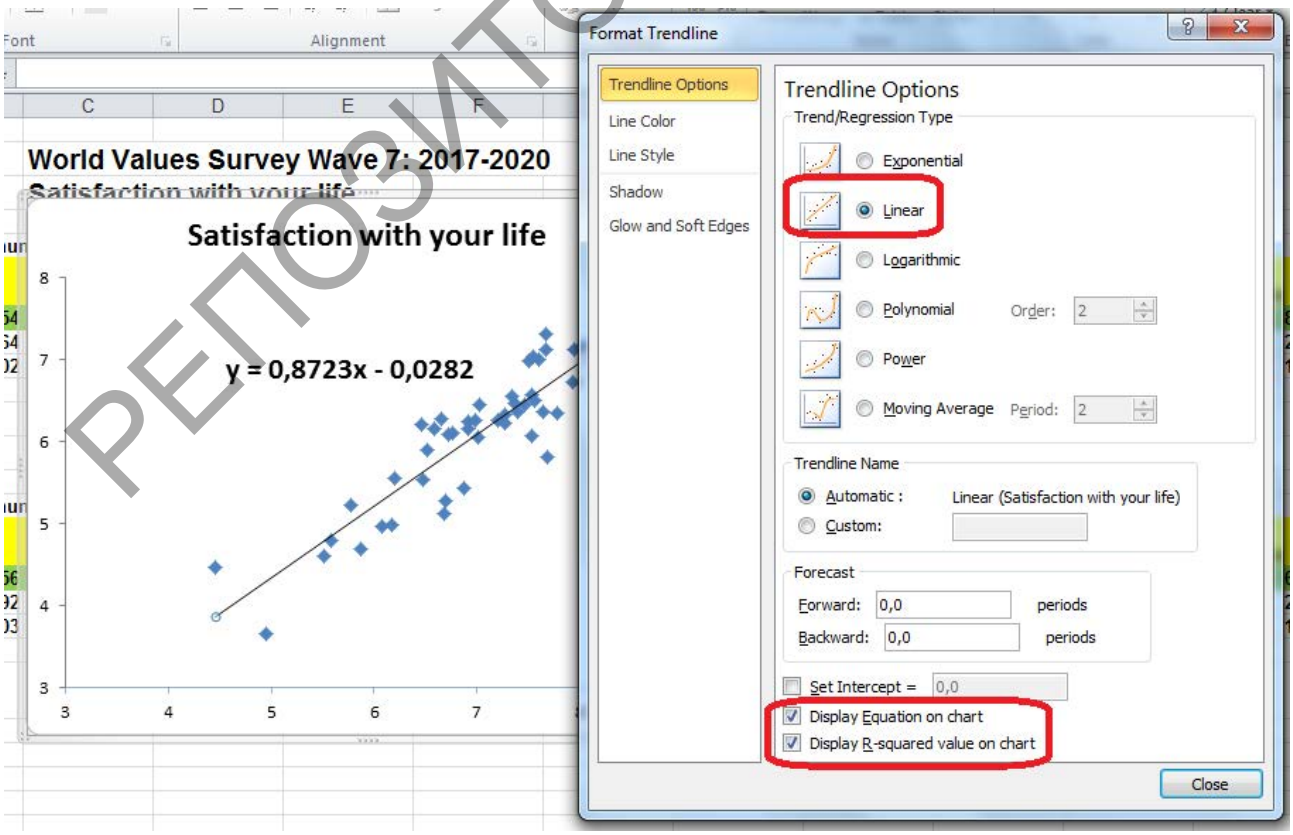
Picture 25 – Plotting linear regression: Data Input



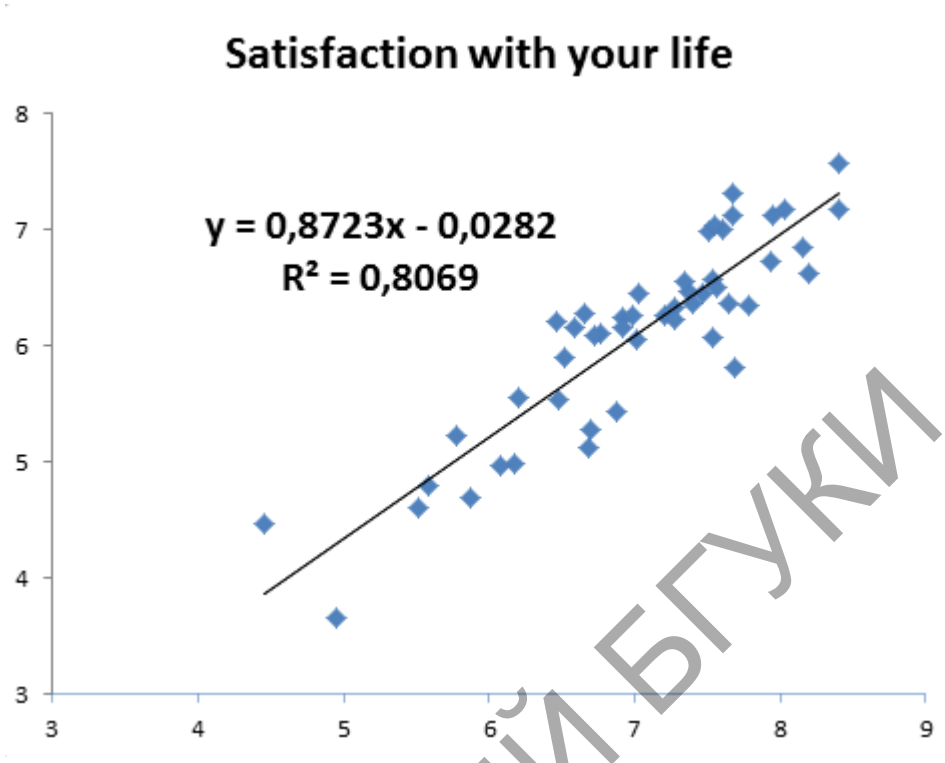
Picture 26 – Plotting linear regression: Axis Values



Picture 27 – Plotting linear regression: Add Trendline



Picture 28 – Plotting linear regression: Add Trendline Options



Picture 29 –Linear Regression

Topic 6. The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information

Laboratorywork 4. The use of cloud technologies in cultural studies

The aim is to study cloud services for creating infographics.

Task 1. Creating Infographics

- Study the possibilities of presenting Infographics with cloud service *Canvas*
- Using cloud service *Canvas* create Infographicsfor your research

Task 2. Creating Infographics Maps

•Study the possibilities of presenting information with maps with *Editable PowerPoint Maps* which are accessible in the resource https://www.brightcarbon.com/resources/editable-powerpoint-maps/

•Using *Editable PowerPoint Maps*create a Map demonstrated the Hofstede Dimensions Indexes of different countries (https://www.hofstede-insights.com/).

Laboratory work 5. Dissemination of theresearch results via cloud technologies

The aim is to get skills of disseminating the research results via cloud technologies

Task 1. Making video presentation

- Make free ZOOM conference with your partner.
- Using the material of *Individual Work 8* make a presentation for your partner and record it in ZOOM. Download the video.

Task 2. Posting the research results in Internet

- Upload the video in the YouTube.
- Support the video with the link on the Google Form Quiz supporting interactive options and collecting the feedback.

Topic 7. Visualization and Presentation of Research Findings

Laboratory work 6. Assessment of the research results presentation

The aim is to study haw to assess research results presentation and analyze the feedback results

Task 1. Research report analysis

- Choose two topics of your group mates
- Watchtheir research reports on YouTube.
- Answer the Quiz questions
- Asses the reports using the following table

Table 10 – Research report analysis

Factual	1	2	3	4	5
Comprehensive	1	2	3	4	5
Clear	1	2	3	4	5
Presented in a logical sequence	1	2	3	4	5
With sufficient detail to inform the reader	1	2	3	4	5
Properly used tables, boxes,maps, charts and figures	1	2	3	4	5

Task 2. Making research report feedback

- Make the comments for your group mates reports on YouTube. Mark
- Make threepoints with what you likein the research and research presentation. three comments
- Mark three points which you would recommended to correct or improve or discuss dipper.
- Read the feedback of your groupmates on your research work. Reflect the results.

3.6 INDIVIDUAL TRAINING TOPICS

Topic 2. Technologies of Cultural and Sociocultural Dimensions

Individual training 1. Hofstede Dimensions Based Cultural Map (2 hours)

Topic 4. Information Technology Approaches to Culture and Cultural Processes Studies

Individual training 2. Analysis of Scientific Publications Accessible in Internet for Clarifying and Planning the Cultural Values Research (2 ours)

Individual training 3. Using Internet Information Resources in Cultural Research Program Development (4 hours)

Topic 5. Processing of the Cultural Research Results

Individual Training 4. Creating the research data base (2 hours)

Individual Training 5. Creating the research data base(2 hours)

Individual Training 6. Linear regression model(2 hours)

Topic 6. The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information

Individual Training 7. Disseminating research results(2 hours)

Individual training 8. Interactive presentation(2 hours)

Topic 7. Visualization and Presentation of Research Findings

Individual Training 9. Research report creating(2 hours)

3.7INDIVIDUAL TRANING TASKS

Topic 2. Technologies of Cultural and Sociocultural Dimensions

Individual training 1. Hofstede Dimensions Based Cultural Map

The aim is to learn the principles of Cultural Maps Building

- Choose two cultures from the following list

Table 11 – Research report analysis of Hofstede Dimensions Based Cultural Map

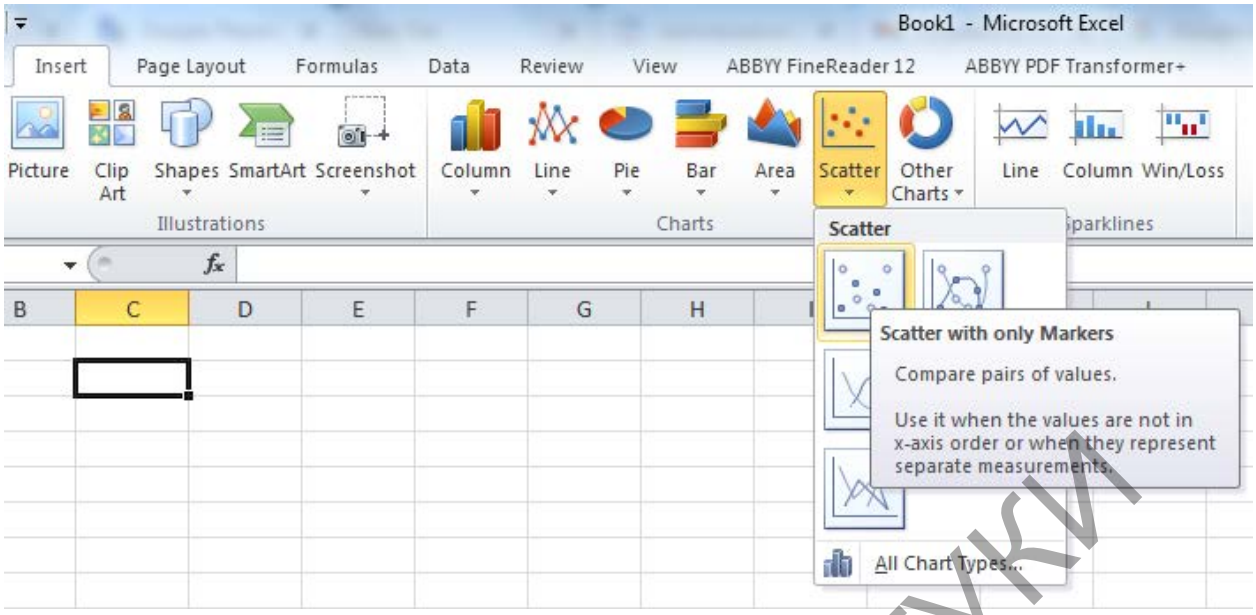
I. MUSLIM WORLD		
Countries of the Arab world:	Algeria, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Qatar, Tunisia, Egypt, Yemen.	
Muslim Asia:	Kazakhstan, Kyrgyzstan, Uzbekistan	
Turkic-speaking Muslim countries	Azerbaijan and Turkey	
II. EUROPE		
Eastern Europe	Orthodox countries	Belarus, Russian Federation, Ukraine, Romania, Armenia, Georgia
	Catholic countries	Poland, Estonia, Slovenia
Western Europe	Germany, Netherlands, Sweden, Spain, Cyprus	
III. ATLANTIC		
Spainidad	Brazil, Chile, Colombia, Argentina, Mexico, Peru, Trinidad and Tobago, Uruguay, Ecuador.	

English-speaking:	USA, New Zealand, Australia.
IV. ASIA	
Eastern Asia	China, Taiwan, Hong Kong, Japan, South Korea, Malaysia, Philippines, Singapore, Thailand
South	India, Pakistan
V. AFRICA	
	Ghana, Nigeria, Rwanda, South Africa, Zimbabwe

- Get to link https://www.hofstede-insights.com/ of the Internet recourse HOFSTEDE INSIGHTS. Using COUNTRY COMPARISON TOOL fill in the flowing table in the EXCEL

Table 12 – Data for analysis in Excel

Country	Power Distance Index calculated as: PDI - 100	Individualism vs. collectivism Index calculated as: IDV-100
Countries of Culture 1 _____		
Countries of Culture 2 _____		



Picture 30 –Linear Regression

- Build the CULTURAL MAP using the EXCEL SCATTER TOOL
- Define the sectors where the countries of two cultures under consideration are placed on the scatter. Make conclusions on the results obtained.

Present the results and conclusions in the form of the report.

Тема 4. Information Technology Approaches to Culture and Cultural Processes Studies

Individual training 2. Analysis of Scientific Publications Accessible in Internet for Clarifying and Planning the Cultural Values Research.

The aim is to get skills of internet sources analysis for clarifying and planning the cultural values research

- Find and download ten relevant papers on the topic of the research designed on the *Practical training 2*.Use the Internet sourcesfrom the Table 2of the Practical training 2.
- Analyze the problems discussed in the papers.
- Clarify the ideas of your scientific research. Present the ideas of your scientific research in the form of no less than 4 pages report.

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Individual training 3. Using Internet Information Resources in Cultural Research Program Development

The aim is to learn how to use information resources for developing a cultural research program

- On the base of *Practical training 2* and *Practical training 3* develop a cultural research program. Present the result in the form of Table 4 from *Practical training 3*.

Topic 5. Processing of the Cultural Research Results

Individual Training 4. Creating the research data base

The aim is to get skills of creating the research data base

- Collect the data, which is obtained by *Electronic Survey* via *Social media Groups*(*Practical training 4), in* the *Google Drive Excel File*.
- Code the data obtained accordingly to the *Research Questionnaire* design, see the *Example* of *Practical Training 4*.
- Build the distribution of the random variable, which indicate answers of the respondents using the theory and *Examples* of the *Lecture4*.
- Collect all the data obtained in the *Google Drive Excel File* as the *Research Data Base.*

Individual Training 5. Creating the research data base

The aim is to get skills of creating and analyzing pivot tables

- Make pivot tables founding on your *Research Data Base.*
- Analyze the results obtained.

Individual Training 6. Linear regression model

The aim is to get skills of creating and analyzing linear regression models

- For your research chose the factors with high correlation coefficient and build the linear regression models in Excel.

- Analyze the results obtained.

Topic 6. The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information

Individual Training 7. Disseminating research results

The aim is to get skills of creating research presentations and disseminate the research results in internet

- Study two papers about the main principles of presenting research results and dissiminating them in Internet:

CastellettiA. DISSEMINATION TOOLS ANDMATERIALS / Andrea Castelletti, Matteo Giuliani,Andrea Cominola, Isabel Micheel,Jasminko Novak, Andrea Emilio Rizzoli, Luigi Caldararu, RicardoWissmann-Alves, Marco Bertocchi. - SmartH2O Project FP7-ICT-619172, 2014. – Mode of access: https://cordis.europa.eu/docs/project/docs-projects-cnect-2-619172-080-deliverables-001-sh2od91polimiwp9v10.pdf

Schober, J. PRESENTING ANDDISSEMINATING RESEARCH / Jane Schober, Andy Farrington, Anne Lacey. - The NIHR Research Design Service for Yorkshire & the Humber, 2009. - Mode of access:https://www.rds-yh.nihr.ac.uk/wp-content/uploads/2013/05/8_Presenting-and-Disseminating-2009.pdf

- *Create Power PointResearch Presentation* with all Infographics elements required for demonstrating the results of your research.
- Disseminate the results of your research work via free presentation resources *SmartH2O SlideShare.*

Individual training 8. Interactive presentation

The aim is to learn approaches for making interactive presentations

- Look through the KHAN ACADEMY video and text presentations. Try interactive tools, for example quizzes. Pay attention haw quizzes help to remember important points of the presentation.
- Prepare the presentation for video report on your research project. Pay attention that this presentation should have less text and more visual material than static presentation.
- Using Google Forms make interactive elements like quiz.
- Prepare 15 minutes report on your research

Topic 7. Visualization and Presentation of Research Findings

Individual Training 9. Research report creating

The aim is to get skills of creating research report

- Prepare research report using the scheme of creating research report from the article:

Schober, J. PRESENTING ANDDISSEMINATING RESEARCH / Jane Schober, Andy Farrington, Anne Lacey. - The NIHR Research Design Service for Yorkshire & the Humber, 2009. - Mode of access:https://www.rds-yh.nihr.ac.uk/wp-content/uploads/2013/05/8_Presenting-and-Disseminating-2009.pdf

4. KNOWLEDGE CONTROL SECTION

4.1 List of credit requirements

The discipline is studied for one semester and provides for independent work of students. To be admitted to credit, a student must fulfil the following requirements:

1. attending lectures;
2. performing laboratory work;
3. performing tasks for controlled independent work.

The form of the test is an oral survey.

4.2 Criteria for assessing student learning outcomes

To prepare for the current/intermediate certification, the student should review all available and recommended materials presented in print or electronic form. Intermediate certification is carried out to assess the quality of students' assimilation of the entire volume of the discipline content and to determine the actually achieved knowledge, skills and abilities, as well as competencies formed during classroom studies and student independent work.

Criteria for evaluating student responses

Score 10-8 points: The answers to the student's questions are presented logically, consistently and do not require additional explanations. Draws reasoned conclusions, demonstrates deep knowledge in the studied area, knowledge of the conceptual apparatus and scientific language in the subject; the ability to use it in setting and solving scientific and professional problems; the ability to independently solve complex problems within the framework of the curriculum; assimilation of basic and additional literature recommended by the curriculum; active independent

work in laboratory (practical) classes, a high level of culture of performing tasks, competent design of educational documentation.

Score 7-5 points: The answers to the questions posed are given by the student systematically and consistently. He/she responds confidently and demonstrates an ability to analyze the material, but not all conclusions are reasoned and based on evidence. The student demonstrates active independent work in practical, laboratory classes, a high level of culture for completing tasks and preparing educational documentation periodically participates in group discussions.

Score 4 points: The student demonstrates a superficial knowledge of the subject. It is difficult for a student to solve specific problems. The student finds it difficult to conclude. The student demonstrates a sufficient amount of knowledge in the subject within the framework of the educational standard.

Score 3-1 points: The student does not have a system of knowledge in the discipline. He/she does not analyze, does not draw conclusions, does not answer additional questions and is passive, has demonstrated a low level of culture of performing tasks and their execution in laboratory (practical) classes, does not know the subject within the framework of the educational standard or refuses to answer.

4.3 Tasks for supervised individual work of students

Individual work of students is aimed at in-depth knowledge of the educational material by systematization, planning and control of their own activities. Each practical and laboratory training is followed by the individual tasks according to the discipline program. The tasks for individual work are described in details in the paragraph 3.7 of this manual. The order of all practical section tasks completing in presented in the paragraph 3.1. The result of each task is supposed to be presented in the form of presentation or report which is considered to be the creative assignment of the student.

4.4 Test questions by topic

Methodical recommendations for implementation

Use a computer program PowerPoint to prepare presentations forthe results of the individual scientific research taking into account the following statements and rules.

PowerPoint is a computer programthat allows you to create and show slides to support a presentation. You can combine text, graphics and multi-media contentto create professional presentations. PowerPoint can improve the clarity of your presentations and help you to illustrate your message and engage your audience. Your presentation will need to be carefully planned and structured in order to achieve your objectives.

As **a presentation tool** PowerPoint can be used to:

- organise and structure your presentation;
- create a professional and consistent format;
- provide an illustrative backdrop for the content of your presentation;
- animate your slides to give them greater visual impact.

1. Designing PowerPoint slides using colour

- Ensure that all of your slides have the same or similar background images and colour schemes. PowerPoint's design templates can be used for this.
- Prepare slides that use a bold colour contrast, e.g. black or deep blue text on a cream background (black and white can be too glaring for the audience).
- Avoid using red or green for text or highlighting as it can be difficult to read.

2. Designing PowerPoint slides Using text

- Avoid using too much text (slides should have no more than six bullet points and each bullet point should be no more than six words long).

– Create bullet points which are clear summaries of key points. It is not necessary for bullet points to be complete sentences.

– Too many variations in font size and type can be visually confusing.

– Ensure that your text is at least 24pt otherwise it may be difficult to read on screen.

– Choose left align for all text to make it easier to read.

– Avoid multiple columns of text on a single slide as they can be difficult to follow on screen.

– Use bold for a clear and simple form of emphasis and headings rather than UPPER CASE, italics or underlining.

– Set clear hierarchies for type size to help your audience distinguish between headings, main text and other types of text.

3. Making the most of graphics

– Make sure graphics are relevant to your text and not just decorative.

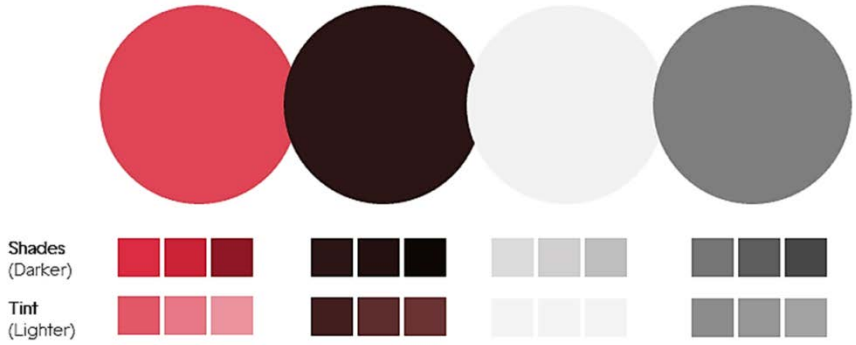
– Consider using graphics to replace text where you think an image would be easier to understand.

4. Use harmonious colour palettes for your slide designs

Color Palette #1- Powerfully Memorable (Red and Grey)

This color palette comprises basically 2 colors: red and grey and shades of them. This high contrast color scheme is applicable to all types of presentations, especially where you need to pitch your products or services.

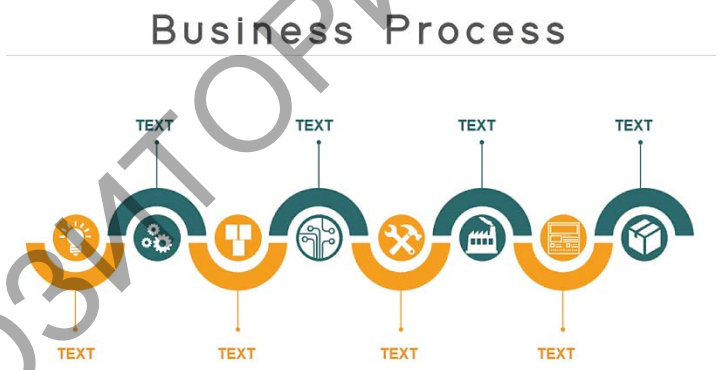
Red adds energy to the content and the slide, while grey grounds the slide, makes it look professional and lets red be the centre of attraction.



Picture 31 –Color Palette #1- Powerfully Memorable (Red and Grey)

Color Palette #2- Vibrant and Young (Plum, Orange, Teal & Grey)

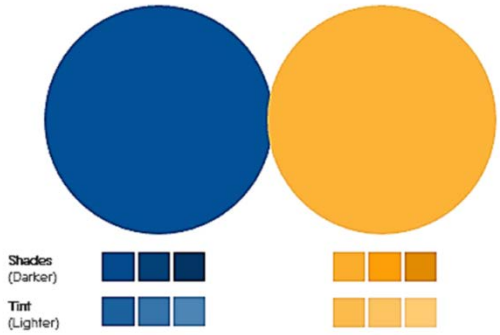
If you feel combining these colors is creating a color riot, just choose any 2 contrasting colors from this palette and make your slides.



Picture 32 –Color Palette #2- Vibrant and Young (Plum, Orange, Teal & Grey)

Color Palette #3- Opposite Attraction (Blue & Yellow)

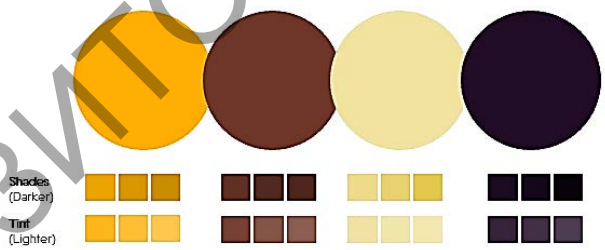
One that represents summer and the other winter. Yellow and blue. A warm and cool color in one single slide gives you the perfect balance- the youthful energy and the professional touch.



Picture 33 –Color Palette #3- Opposite Attraction (Blue & Yellow)

Color Palette 4- Down to Earth vs. Royal (Brown & Gold vs. Dark Purple)

Earth tone color schemes include combination of browns and tans. The soil, clay, dirt and rocks give us neutral colors that can be used to give a down-to-earth look to our presentation. Here's such a scheme that contains all the neutral colors except one- dark purple that is a color of royalty.



Picture 34 –Color Palette 4- Down to Earth vs. Royal (Brown & Gold vs. Dark Purple)

5. Making the most of animations

- Animating elements of slides and using Slide Transition are two of the most powerful features that PowerPoint offers.
- It is very easy to overdo your use of these features and create a presentation where the animation distracts your audience from the content of your presentation.

– Use animations to show progression. Animation is very effective at revealing a process one stage at a time.

– Be conservative. Make sure that any animation you use serves a clear purpose (e.g. to introduce a new piece of information at an appropriate point). If you cannot think of a reason to animate your slide - don't do it!

– Be consistent. Try to ensure that you use similar types of animation for similar functions. For example, if your text always drives in from the left it will be distracting if it suddenly appears from another direction or uses another animation technique.

6. Create a presentation

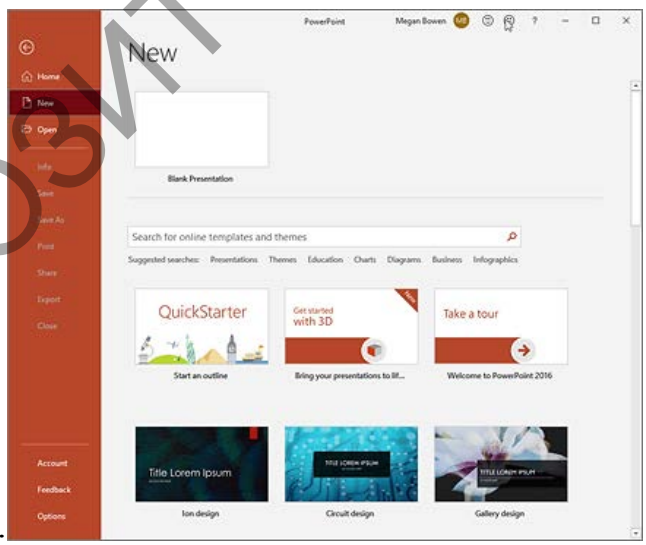
1. Open PowerPoint.

2. Select an option:

– Select Blank Presentation to create a presentation from scratch.

– Select one of the templates.

– Select Take a Tour, and then select Create, to see tips for using PowerPoint



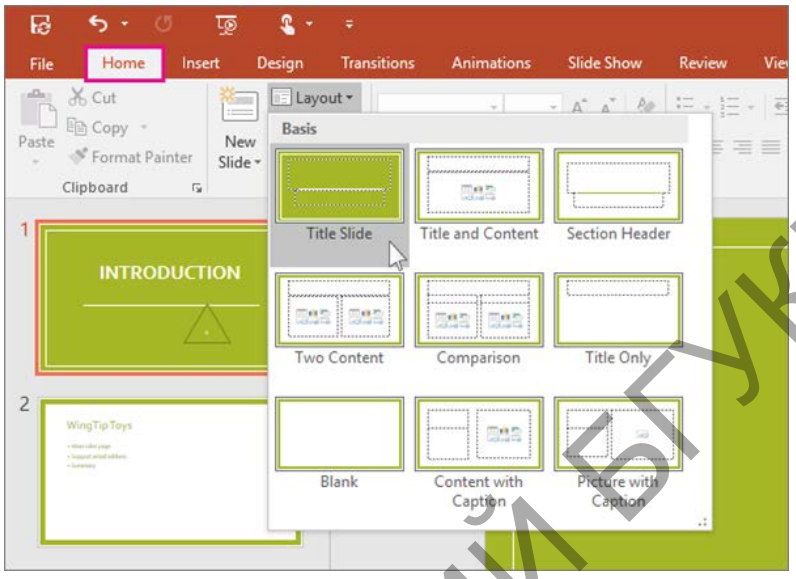
Picture 35 – Opening PowerPoint

Add a slide

1. Select the slide you want your new slide to follow.

2. Select **Home**>**New Slide**.

3. Select Layout and the you type want from the drop-down



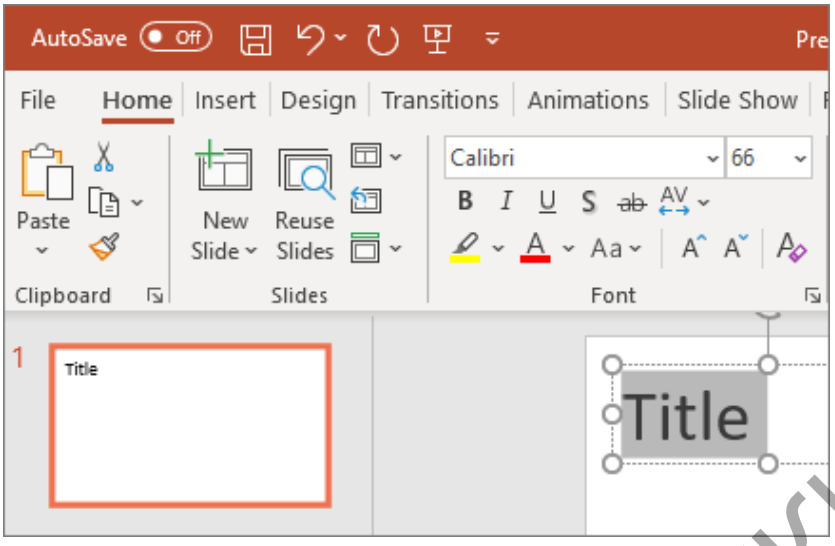
Picture 36 –Layout from the drop-down

Add and format text

1. Place the cursor where you want, and type.

2. Select the text, and then select an option on the Home tab: Font, Font size, Bold, Italic, Underline, ...

3. To create bulleted or numbered lists, select the text, and then select Bullets or Numbering.



Picture 37 – Format Text

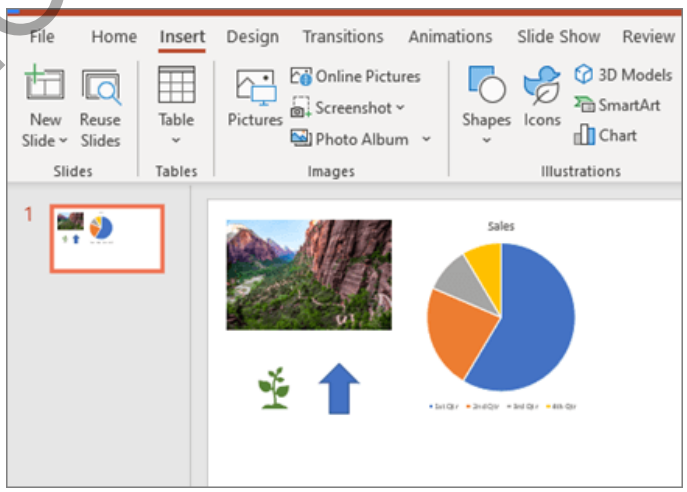
Add a picture, shape, or chart

1. Select **Insert**.
2. Toadd a picture:

- Select **Picture**.
- Browse for the picture you want and select **Insert**.

3. To add a shape, art, or chart:

- Select **Shapes**, **Icons**, **SmartArt**, or **Chart**.
- Select the one you want



Picture 38 – Adding an image

Requirements for the design of slides

Style	Unified slide design style. Avoid styles that distract from the presentation itself. Auxiliary information (control buttons) should not prevail over the main information (text, Figures).
Background	The background should not be too bright or colorful.
Use of color	Contrasting colors are used for the background and text.
Animation effect	You can't overload slides with animation effects. To change slides, you must use the same animation effect.

Requirements for submitting information

Information content	The text on the slides should be readable. Each slide must contain a title. Don't put a dot at the end of titles. Headlines should attract the audience's attention.
Location of information on the page	Preferably, the information should be placed horizontally. The most important information should be located in the center of the screen. If the slide contains an image, the label must be located below it. The space of the slide (screen) should be used as much as possible.
Fonts	For titles – at least 24. for information-at least 18. for text, it is best to use the following fonts: Arial, Tahoma, Verdana, Times New Roman, Courier New. You can't mix different font types in the same presentation. Use bold, italics, or underscores to highlight information. Capital letters should not be

	used too often.
Waystohighlightinformation	You should use: borders, borders, fill, hatching, arrows, drawings, diagrams, diagrams to illustrate the most important facts.
Quantity of information	Do not fill one slide with too much information: no more than three facts, conclusions, and definitions; no more than 7 elements per slide.
Types of slides	To ensure diversity, you should use different types of slides: with text, with tables, and with diagrams.

4.5 List of questions for credit

1. Research field of the cultural and sociocultural studies.
2. Methodology as a logical and philosophical basis of research.
3. Methodological principles of research in the socio-cultural field.
4. Object and subject of cultural studies.
5. Culture as a specific object and subject of research.
6. Society as an object of socio-cultural research.
7. The Internet content as an object of thecultural research.
8. Phenomenon of cultural dimensions.
9. Typology of Hofstede’s cultural dimensions.
10. Parameters of Hofstede's model: Individualism (IDV), Masculinity (MAS), uncertainty avoidance (UAI), long-term orientation (LTO), assumption (or indulgence).
11. Modern models of cultural metrics and their parameters.
12. Problems of quantitative assessment in the cultural field. Assessment approaches of cultural effectiveness.
13. Information technology as a mean to develop metrics and evaluation of cultural effectiveness.
14. Methods of cultural studies.
15. General approaches: dialectical, systemic, structural-functional, comparative, typological.
16. Specific approaches: anthropological, semiotic, hermeneutic, biographical, historical, diachronic, synchronic, archaeological, psychological.
17. Applying software for quantitative and qualitative statistical analysis to socio-cultural studies.
18. Methodological problems of applying quantitative methods in cultural studies.
19. Survey methods in quantitative studies (interviews, questionnaires, online surveys) and instrumental means of their arrangement.
20. Interpreting the results of quantitative research problem.

21. Internet as a mean of research the specifying data.
22. Statistical analysis of documents by means of information technology: quantitative analytical-documentary approach.
23. Determining the research direction and topics.
24. Study of the bibliographic and other information sources through the Internet.
25. Evaluation of the research topic relevance based on the analysis of the Internet sources.
26. Identification of the research question: contradiction principle.
27. Object and subject of the research: principles of research accessibility.
28. Detecting the purpose and research objectives relevance through the analysis of the Internet sources.
29. Use of on-line resources (electronic Encyclopedias, libraries, terminology dictionaries, websites professional orientation) for basic concept clarification and interpretation: identification of correlation with the real events; evaluation of the degree to which the concept is reflected in the real world; identification of the scientific and cultural significance of the phenomena.
30. Formulation of the research hypothesis: types of hypotheses (hypotheses assumptions, hypotheses-basis, hypotheses-consequences, descriptive, explanatory, etc.)
31. Probability theory and applied statistics.
32. Statistical experiment and representation of experimental data.
33. The statistical population and random value realization.
34. Basic statistical models.
35. Dispersion estimation, correlation analysis, linear regression analysis.
36. Explanation and interpretation of the cultural study results.
37. Information technology means for applied statistics problems solving.
38. Capabilities of statistical analysis software and spreadsheets.
39. Statistical data in the Internet.
40. The use of cloud technologies in cultural studies.

41. Google's statistical data processing capabilities.
42. Social networks as a mean of obtaining statistical data.
43. Social networks opportunities in statistical data processing.
44. Cartographic analysis. World Values Survey Database.
45. Structure of the scientific report.
46. Preparation and presentation of the research report and research documentation.
47. Multimedia presentation of research results.
48. Scientific and educational movie-videos.
49. Infographicsin research.
50. Internet as a mean to present the scientific research results.

5. AUXILIARY SECTION

5.1 Curriculum of academic discipline

The curriculum is designedon the basis of educational standards of the II stage of higher education(Master's Degree)for specialty 1-21 80 13 Cultural science (by directions) and standard curriculum of higher education institution on specialty 1-21 80 13 Cultural science from 21.03.2019, registration number: Д21-2-006.

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The Presidium of the Scientific and Methodological Council of the Educational Establishment «Belarusian State University of Culture and Arts» (minutes №2 of 14.02.2020)

EXPLANATORY NOTE

The curriculum of the academic discipline «Information Technologies in Cultural Studies»is designed for foreign students who get education in English and assimilate the curriculum of the second stage of higher education. The discipline program is designed to develop knowledge and skills of scientific, pedagogical and research work as well as for the attainment of a master's degree.

Modern standards of cultural education require students' ability and skills to analyze the evolutionary processes of the society'scultural life, the basic laws and variations of its development. The course «Information technologies in cultural studies» is designed to teach studentsto conduct cultural studies on their ownto investigate the culture and its structure on empirical level.

The content of the academic discipline is aimed at forming general-purpose competencies, including skills to use information technologies for analytical and forecasting purposes in professional activities, modeling of the innovative socio-cultural processes and phenomena, identifying the trends in their development (GC-3);as well as advanced professional competencies in development and application of information resources in socio-cultural institutions and organizational activities (GPC-5).

The interdisciplinary discipline «Information Technologies in Cultural Studies» is related to the discipline «Organizing and conducting scientific research», which is included in the module «Research work».

The purpose of the discipline is to train students to organizethe cultural studies, prepare research programs, collect and process statistical data, summarize and analyze research results, formulate conclusions and recommendations on cultural policy.

Tasks of academic discipline:

- formation of the methodological base of a cultural specialist,
- mastering the methods of organizing and conducting sociocultural studies;

- developing skills to analyze data, draw conclusions and formulate recommendations on cultural policy implementation.

After completing the discipline, *students shouldknow*:

- methods of cultural researches;

- the main sociocultural problems of society, ways and technological means of their solution.

to be able to:

- investigate sociocultural processes;

- implement cultural policy strategies developed on cultural analysis basis.

use and apply:

- methods of scientific cultural researches;

- basic skills and methods for society sociocultural situation assessment;

- skills of identifying the modern society sociocultural problems;

- system of basic cultural concepts and directions.

The content of the discipline includes: general characteristics of social and cultural studies (their types), methods and approaches of sociocultural studies organization and conducting sociocultural researches, approaches for developing research programs, results processing, research conclusions generalization and presentation, techniques for developing recommendations and their implementing in practice.

Successful learning of the discipline requires a student toknow the basis of psychology, pedagogy and sociology.

The curriculum of the discipline«Information Technologies in Cultural Studies» provides 94 hours, distributed in 52 academic hours, which include 20 hoursof lectures, 20 hours of seminars , 20 hours of labs, and 42 hours for self-preparation.

The recommended form of students' knowledge control is a credit-based system.

THE CONTENTOF DISCIPLINE

Topic 1. Cultural and Sociocultural Studies: Research Field, Theoretical and Methodological Foundations

Key words: cultural studies, sociocultural field, problem research field, methodological bases.

Research field of the cultural and sociocultural studies. Methodology as a logical and philosophical basis of research. Methodological principles of research in the socio-cultural field.

Object and subject of cultural studies. Culture as a specific object and subject of research. Society as an object of socio-cultural research. The Internet content as an object of thecultural research.

Topic 2.Technologies of Cultural and Sociocultural Dimensions

Key words: cultural dimensions, parameters of the dimensions model, quantitative assessments, cultural effectiveness.

Phenomenon of cultural dimensions. Typology of Hofstede's cultural dimensions. Parameters of Hofstede's model: Individualism (IDV),Masculinity (MAS), uncertainty avoidance (UAI), long-termorientation (LTO), assumption (or indulgence). Modern models of cultural metrics and their parameters.Problems of quantitative assessment in the cultural field. Assessment approaches of cultural effectiveness. Information technology as a mean todevelop metrics and evaluation of cultural effectiveness.

Topic 3. Information Technology Approaches to Cultureand Cultural Processes Studies

Keywords: cultural studies methods, quantitative and qualitative methods, survey methods, statistical analysis.

Methods of cultural studies. General approaches: dialectical, systemic, structural-functional, comparative, typological. Specificapproaches: anthropological, semiotic, hermeneutic, biographical, historical, diachronic, synchronic, archaeological, psychological.

Applying software for quantitative and qualitative statistical analysisto socio-cultural studies. Methodological problems of applying quantitative methods in cultural studies. Survey methods in quantitative studies (interviews, questionnaires, online surveys) and instrumental means of their arrangement. Interpreting the results of quantitative research problem. Internet as a mean of research the specifying data. Statistical analysisof documents by means of information technology: quantitativeanalytical-documentary approach.

Topic 4.Information Technologies in Developmentof Cultural Research Plan: steps, principles, methods

Keywords: research topic, object, subject, identificationresearch purpose, problem setting, research hypothesis, internet sources.

Determining the research direction and topics. Study of the bibliographic and other informationsources through the Internet. Evaluation of the research topic relevance based on the analysis of the Internet sources. Identification of the research question: contradiction principle.Object and subject of the research: principles of research accessibility. Detecting the purposeand research objectives relevance through the analysis of the Internet sources. Use of on-line resources (electronicEncyclopedias, libraries, terminology dictionaries, websitesprofessional orientation) for basic concept clarification and interpretation: identification of correlation with the real events; evaluation of thedegree to which the concept is reflected in the real world; identification of the scientific and cultural significance of the phenomena.

Formulation of the research hypothesis: types of hypotheses (hypothesesassumptions, hypotheses-basis, hypotheses-consequences, descriptive, explanatory, etc.)

Topic 5. Processing of the Results of Cultural Research

Key words: statistical experiment, random value,statistical models, statistical analysis software.

Probability theory and applied statistics. Statisticalexperiment and representation of experimental data. The statistical population and random value realization.Basic statistical models. Dispersion estimation, correlation analysis, linear regression analysis. Explanation and interpretation of the cultural study results. Information technologymeans for applied statistics problems solving. Capabilities of statistical analysis software and spreadsheets.

Topic 6. The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information

Key words: statistical data, cloud technologies, World Values Survey Database.

Statistical data in Internet. The use of cloud technologiesin culturalstudies. Google's statistical data processing capabilities. Social networks as a mean of obtaining statistical data. Social networks opportunities in statistical data processing.Social networks as a mean of disseminating statistical data.Cartographic analysis. World Values Survey Database.

Topic 7. Visualization and Presentation of Research Findings

Key words: scientific report, research documentation, multimedia presentation of research results data.

Structure of the scientific report. Preparation and presentation ofthe research report and research documentation.

Multimedia presentation of research results.Scientific and educational movie-videos. Infographics. Internet as a mean to present the scientific research results.

EDUCATIONAL AND METHODICAL CHART OF THE DISCIPLINE

№	Name ofdiscipline sections	Classroom hours				Individual work	Assessmentform
		Total	lectures	labs	Practical classes		
1	Cultural and Sociocultural Studies: Research Field, Theoretical and Methodological Foundations	2	2				
2	Technologies of Cultural and Sociocultural Dimensions	8	2		2	2	Researchproj ect
3	Information Technology Approaches to Culture and Cultural Processes Studies	4	2		2	2	
4	Information Technologies in Development of Cultural Research Plan: steps, principles, methods	6			2	2	Report
5	Processing of the Results of Cultural Research	16	2	6	4	6	Research project
6	The Internet as a Modern Medium of Receiving, Disseminating and Exchanging Research Information	8		4		4	Presentation and video
7	Visualization and Presentation of Research Findings	8		2	2	4	Report

	TOTAL	**52**	**8**	**12**	**12**	**20**	**52**

5.2 Recommended Assessment Means

It is recommended to use the project work, scientific report and presentation of research results to assess the students' academic achievements level and to identify its compliance with the requirements of the educational standard. All activities should include the development, planning and implementation of cultural research as well as creative and heuristic issues and prognostic conclusions.

5.3 Guidelines for Organizing and Carrying out Individual Work on Discipline

Students' individual work is aimed at enriching their skills in the discipline "Information Technologies in Cultural Studies" beyond the in-class activity. The purpose of students' individual work is to facilitate the full assimilation of the discipline content through the systematization, planning and control of their individual activities. The teacher gives assignments for individual work and regularly checks them.

According to the content, goals and objectives of the discipline " Information Technologies in Cultural Studies " students are expected to carry out the following types of individual work: collection and analysis of cultural data, formulation of conclusions and forecasts, development of the research report, development and presentation of research results.

5.4 Criteria for Evaluating Students' Knowledge and Skills Level

To assess students’ achievements it is recommended to use the following diagnostic tools:

- questioning students during classroom discussions;
- testing selected topics of discipline;
- defense of individual tasks performed during classes;

- presentation of the individual work and discussion on the obtained research results;

- defense of individual project;

- student's participation at the conference with research results presentation;

- passing the final test in discipline

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