

THE USE OF SOFTWARE TOOLS IN SOCIOLOGICAL RESEARCH

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Abstract: *The science of sociology cannot be imagined without an empirical sociological research process. the word empirical is ancient Greek, meaning experience. empirical sociological research refers to the development of necessary practical proposals, recommendations based on the analysis, generalization of empirical data obtained on the phenomenon and processes of social life on a practical basis with a new program and methodology. in empirical sociological research, the search, classification, accumulation of social facts is important. Social fact refers to information obtained by classifying individual aspects of real social reality in a scientifically based, specific time treatment.*

Keywords: *software, sociological research, research program, software, software tools.*

Today, the production of software products, which are considered the basis of the development of the information and communication sphere, is of particular importance as an important condition for the development of the national economy. The effective use of information exchange technologies, which are actively used in every aspect of our life, depends on the uniqueness, popularity and innovative novelty of the software in them. The laws “On informatization”, “On Telecommunications”, “On the protection of ECM programs and databases” are important in the development of the industry.

Today in our country there is no sphere in which information and communication technologies have not penetrated. This, in turn, opens a wide path to the consistent development of the softwares industry. In particular, more than 260 business entities engaged in the creation, production and implementation of software products are currently operating in our country.

In the process of the transition to current market relations, significant changes taking place in society, relations between people cannot be studied on a scientific basis without practical sociological studies. It is necessary that the scientific management of society always rely on the results of practical sociological research. In solving existing social problems, in the social development of society and its management on a scientific basis with the



provision of a planned forecast, the results of practical Sociological Research perform important tasks.

Particular attention should be paid to its methodological basis in order to ensure that empirical data is reliable, scientifically substantiated, in order to increase the quality level and effectiveness of sociological research. In this section, let's dwell on xycycu, the methodology, main methods and means of conducting practical sociological research.

"Sociological research techniques-represent the unity of special methods, expressing the productive and in-place use of one method or another. The sociological research process refers to the method, tool, process of completion of all cognitive and organizational activities of the organization of research"[1].



In the early stages of Social Development, people used natural means of information transmission, and later created them. At the next, civilizational stage of the development of society, information technology is associated with the emergence of artificial external memory – writing. Writing played a large role in the human transition from biological evolution to social evolution, greatly increasing the level of social character of his knowledge of being.

The next stage in the development of information techniques is associated with the emergence of technical means of information transmission (Telephone, Telegraph, radio). But the psychophysiological capabilities of a person as a reflective system gradually collided with the complexity of controlled processes, and this led to the emergence of a completely new means of information-computers. With the advent of computers, a new stage in the development of the media began. A person, trying to overcome the psychophysiological limitations of his organism with the help of technical means, is imposing mental labor, information processing and even some abstract thinking functions on information techniques.



The emergence of modern information technical means is based on the advanced achievements of the development of Science and technology-electronic industry, communication technical means, audiovisual techniques. Informatics embodied the new relationship of Science and production.

There are different views on the prospects for the development of computer technology. According to some experts, in the near future, an incredible increase in the quality and quantity of computers will occur. Others estimate that silicon technology will be the complete opposite as a result of its loss of relevance. But now other materials with semiconductors are also being tested, in the future it is envisaged to create a "neural-network" approach to the construction of computers, optical elements, computers on the basis of Molecular Biology. As always, the obsolescence of one natural principle leads to the transition to new natural principles, materials, energy.

The development of software tools has become a major network, the profession of a programmer – a mass profession. In the US, the programming industry is now growing by 30% per year. It is no coincidence that about 70% of the world software production industry belongs to the United States. The total number of software services firms exceeded 4,000 in the US, 3,000 in the UK, and 2,500 in Japan[2].

Various software products are used to process and analyze empirical information. In particular, data analysis is possible using the Microsoft Excel office application, as well as a number of add-ons to it: "Data Analysis", AtteStat,

Real Statistics, Sigma Magic, Statistician, StatPlus, XLSTAT. The analysis of arrays of sociological information is usually carried out using universal statistical packages. According to the results of the study of publications in the Google Academy search platform for 2018, it was found that today SPSS Statistics, SAS, R, Stata are most often used when writing scientific papers. For twenty years, the leadership has remained with the SPSS program, currently owned by IBM.

The undeniable advantages of this package are a friendly graphical user interface, data management and statistical analysis capabilities, and the presence of a command language (syntax). SAS and Stata have great capabilities compared to SPSS in programming user applications.

For structural equation modeling and, in particular, confirmatory factor analysis, specialized packages IBM SPSS Amos, LISREL, Mplus, SmartPLS are used, and for latent class analysis - IBM SPSS Amos, Latent GOLD and Mplus. It should be noted that in addition to commercial software products, there is



also freely distributed software for solving problems of processing sociological survey data, for example, R, SAS University Edition, PSPP.

On August 21-26, 2023, the International University of Westminster in Tashkent organized a summer school with the cooperation of the Association of sociologists of Uzbekistan, the International University of Westminster in Tashkent and Friedrich Ebert in order to develop scientific dialogue with leading scientists in sociology and related fields for young students, doctoral students, teachers, researchers and practitioners.

This school will help sociologists of Uzbekistan join the international network of sociologists and improve their scientific qualifications. In addition, there is an opportunity to join the International Association of sociologists and the Association of sociologists of Uzbekistan, to demonstrate its sociological activities on a global scale.

This school was held with the aim of improving the qualifications, professional knowledge and skills of talented and most active young sociologists, students, undergraduates, doctoral students, the formation of research skills in accordance with international standards using scientific and practical methodology and methods, and the qualitative and effective development of empirical sociology in the future. A special place in the presentation was allocated to the application and use of the following programs in the technology of conducting sociological research of the Center "Social Thought":

- "Naumen" - a comprehensive software solution that includes everything necessary to organize a communication center;
- The " CATI " method is used to conduct a telephone survey;
- "DigSee Sure" - software that works in both online and offline mode to query tablets with the "TAPI" method;
- "Power BI" is a comprehensive software for online analysis and visualization of data obtained by combining several software products with general technological and visual design, connectors, as well as Web Services;
- "SPSS Statistics" is a software tool for processing statistics designed for processing large amounts of data, and scripts designed to work with heat maps for the purpose of visualizing data for the possibility of interpreting the data obtained.



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