

# СОЦІОЛОГІЧНІ НАУКИ

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## SOCIOMETRIC RESEARCH AND THE USE OF ITS RESULTS IN THE OPTIMIZATION OF THE SIMULATION GAME

**Summary.** Simulation games are a method of simulating modern joint actions of people in order to solve a narrow problem in the form of a model, used in almost all spheres of public life. Widespread both in Ukraine and abroad, most researchers explain the possibility of their repeated use to solve common problems and achieve certain results [1–3]. Sociologists often refer to the modeling game as a social technology. From the point of view of social technology, the modeling game belongs to the sociological means, to the practical activity of the sociologist and is aimed at providing managerial activity, as well as at defining and transforming a social object. The attribution of the simulation game to the field of management is due to the fact that this type of game unites all members of the group into a single system with the need to make a joint decision. The subject of the study is the relationships and problems that have a direct or indirect connection with the field of a particular activity, and the games played in the work team are aimed at organizing the most productive way of functioning of members of this group.

**Keywords:** sociometry, modeling game, political advertising, game scenario, sociometric research.

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## ВИКОРИСТАННЯ РЕЗУЛЬТАТІВ СОЦІОМЕТРИЧНОГО ДОСЛІДЖЕННЯ ПРИ ОПТИМІЗАЦІЇ СЦЕНАРІЮ МОДЕЛЮЮЧОЇ ГРИ

**Анотація.** Моделюючі ігри являють собою метод імітації сучасних сумісних дій людей з метою вирішення вузької задачі у вигляді моделі, використовуються майже в усіх галузях суспільного життя. Широке розповсюдження як в Україні, так і за кордоном, більшість дослідників пояснюють можливістю їх багаторазового використання для вирішення спільних завдань та досягнення певних результатів [1–3]. Соціологи найчастіше звертаються до моделюючої гри як до соціальної технології. Моделювання – це специфічне багатофункціональне дослідження. Його головне завдання – відтворити на підставі подібності з суцільним об'єктом інший, який замінює його об'єкт (модель). Модель – це аналог оригіналу. Вона повинна мати схожість з оригіналом, але не повторювати його, так як при цьому саме моделювання втрачає сенс. Неприпустимо і про-довільно моделювання; в цьому випадку воно не дає належного представлення про оригінал моделі і також не виконує своєї функції. Всі соціальні процеси здійснюються людьми, а вчинки, думки, почуття людей не можуть мати числового відображення. Звідси – об'єктивно необхідними стають різні методи аналізу якісного змісту процесів у соціальній сфері. З точки зору соціальної технології моделююча гра належить до соціологічних засобів, до практичної діяльності соціолога та спрямована на забезпечення управлінської діяльності, а також на визначення та перетворення соціального об'єкта. Віднесення моделюючої гри до галузі управління обумовлено тим, що такого типу ігри об'єднують усіх членів групи в єдину систему необхідністю прийняття спільного рішення. Предметом дослідження є відносини та проблеми, що мають прямий або непрямий зв'язок з галуззю конкретної діяльності, а ігри, які проводять в робочому колективі, спрямовані на організацію найбільш продуктивного способу функціонування членів цієї групи.

**Ключові слова:** соціометрія, моделюючі ігри, політична реклама, сценарій гри, соціометричне дослідження.

**Formulation of the problem.** The focus of modeling games on the recognition and transformation of a social object is expressed in their use, on the one hand, to collect sociological information, and on the other – to develop positive attitudes to obtain this information, its use by a wide range of professionals and the formation of constructive mechanisms. connection of social problems.

**Selection of previously unresolved parts of the overall problem.** The attribution of the simulation game to the number of tools that are actively used in sociology is explained by the fact that it is possible to obtain objective information about the opinions, assessments, positions and interests of participants in the game at almost all stages of sociological research. Effective conducting of

modeling game at the stage of research preparation at formulation of problems, hypotheses that allows to specify quickly and technologically and to check both the concept or the plan of research, and its tools. Significant assistance to the researcher can be provided by conducting the game at the final stage of sociological research, in the preparation of recommendations and suggestions.

One of the most important components of a simulation game that ensures its successful implementation is a scenario, the development of which often has difficulties, taking into account two main aspects: temporal and organizational [3].

Inaccurately calculated time for the game, ensures its successful conduct, there is a scenario in the development of which there are often

difficulties taking into account two main aspects: time and organizational [3].

Inaccurately calculated time for the game or any of its stages can lead to the fact that the game will not take into account important points, such as emotional reflection, generalization of results, certain thematic aspects, which will lead to a lack of logical conclusion of the game.

Organizing the joint activities of the players in such a way as to meet the established time frame, which does not always depend on the wishes of the methodologist, but often due to external circumstances, allows the use of formal and informal ties of group members. Preliminary acquaintance with the team allows you to save time on organizational moments, to prepare props in advance, to avoid long pauses.

Another block of complications that the methodologist faces when developing a scenario of a simulation game is the organization of joint activities of players in the most effective way. Knowledge of the leadership structure allows you to reorient destructive leadership in the group by distributing negative leaders and strengthening ties between positive leaders, to identify subgroups within which to form their own leadership structure.

However, while formal leadership, associated with established rules for appointing a leader and functional relationships, is usually rigidly structured and fairly easy to identify, informal leadership based on personal relationships may not have a clear hierarchy and is difficult to analyze. At the same time, in work teams that have a fairly extensive network of internal relationships, often the informal leader (or leaders) becomes the "engine" of the group and determines the further course of its development as a whole organism [4].

Thus, the use of research results that reveal formal and especially informal leadership in the group in the development of a simulation game scenario allows you to organize the game in the most productive way, taking into account the time and organizational aspects.

One of the methods to identify the informal structure of leadership in the team is sociometry, which is a widely used means of "measuring" the socio-psychological characteristics of group members [5]. The sociometric test is designed to diagnose emotional connections, ie mutual likes and dislikes between group members, and is a technique for measuring a specific type of interpersonal relationship, expressed in different evaluative judgments of group members in terms of willingness or unwillingness to interact with each other. It is an effective method of assessing the psychological climate of the group and interaction in it. The information obtained shows the positions of individuals in the group, types of interpersonal relationships, identifies leaders.

The expediency of using a sociometric test to study the positions of group members, cohesion or disunity in the team and intergroup subsystems with its structure of informal leadership is explained by several factors. First, such a technique is objective, which is provided by measuring the feature under study in one sense. Thus, the test results do not depend on the personality of the evaluator. Secondly, if all the conditions for the

sociometric test are met, it has such characteristics as reliability and truthfulness, which is confirmed by measuring the same set of characteristics at certain intervals or in other ways and observing the behavior of the group (6).

**Formulation of the goals of the article (task statement).** We hypothesized the feasibility and possibility of using the results of sociometric research in optimizing the scenario of the simulation game. The temporal and organizational aspects of the game were considered as the main criteria for optimization.

**The purpose of the study** is to confirm the hypothesis about the use of the results of sociometric research in optimizing the scenario of the simulation game

**Results of the research.** In the present study, the proposed approach was used in the study group of the National University "Zaporizhzhya Polytechnic" to determine the effectiveness and possibilities of using the results of the sociometric test in developing a scenario of the simulation game "Psychological influence in political advertising".

The conducted sociometric analysis is a secondary processing of data obtained during a study conducted in the spring of 2021 among students of the study group Yu-210 of the Faculty of Law of NUZP. The team consists of 19 people, each of whom is assigned a number from 1 to 19 for easy data processing and anonymity.

As a result of assessing the main sociometric characteristics of the team members studied (sociometric status, emotional expansiveness, volume indices, intensity and concentration of interaction), as well as the analysis of a generalized concentric sociogram, which emphasizes the hierarchical structure of relationships in the group, conclusions were drawn in the team. The study found that there were no leaders in the study group that brought together all or most of the team. The study group is represented by several small subgroups, which identified 7 informal leaders: № 5,7,8,11,13,15 and 16.

It is also worth noting that informal leaders have an informal influence on the team. Thus, 4 students (№ 7, 8, 11, 13) are positive leaders and strive for a favorable situation in the group structure. 3 students (№ 5, 15, 16) are identified as negative leaders who lead the team to separation and conflict.

The degree of influence of both positive and negative leaders also varies. Among the positive leaders, № 7 and №8 clearly stand out. These members of the group have close to the maximum volume of interaction (0.94), which indicates their relationship with almost all members of the group. They are able to focus on the main flows of psychological information. At the same time, the indicators of the group's attitude to leaders as an object of communication and the attitude of the latter to the team as a subject of communication are the highest among group members. Also, it should be noted that the position that the group assigns to the leaders № 7 and 8 is equivalent to the position it wants to take (the index of sociometric status is equal to the index of emotional expansiveness).

Leaders № 11 and № 13 have less influence on the group than their colleagues № 7 and 8. At the

same time, the relationship between the leader № 13 and the latter two is quite close, in contrast to the leader 11, which is associated with constant positive relationships only with one of the leaders (№ 7). Another fact indicates a higher position of the leader № 13 in the group structure: his need for communication and interaction with others is quite high (the index of emotional expansion is 0.63), in contrast to the leader № 11, whose desire to communicate is less developed, than the group estimates. Also, the concentration of leader interaction № 13 is higher than in № 11, which indicates a more significant position of the former in the group structure.

Negative leaders can also be divided according to the degree of influence on the team. The influence of the leader № 5 is not as great as the leaders № 15 and 16, who interact closely with each other and are a single group, which leads to an increase in their influence on the team as a whole.

As for the relationship between positive and negative leaders, the positive interaction, although rather weak, occurs only between negative leaders and the leader №8. Leader № 11 has almost no such connection. Leaders № 7 and № 13 interact very weakly but negatively with almost all negative leaders.

In the team 4 people have a positive index of influence on the group (№ 4, 9, 10, 2). However, № 4, 10 are influential on the group independently of others, in contrast to № 2.9 whose status in the group increases due to the close relationship with the leaders № 8 and № 13, respectively.

6 people in the group, respectively, almost do not affect the team as a whole (№ 1, 3, 6, 12, 14, 17): their connection with others is unstable and weak. Two of these 6 people are students who rarely attend classes. Perhaps this explains their low degree of influence on the team. However, we should not talk about any pattern in this case. Students have the least influence on the group out of all its members № 12.17. However, these people may have a weak but positive connection with the group.

Outsiders, ie people who have no connection with other members of the team, were not identified in the group during the study. This fact should be assessed as positive, because it is easier to refocus on cooperation negative relationships between people than indifference on the part of any member

of the group or team. Using the results of sociometric analysis of the study group, we tried to organize the activities of members of the study team taking into account their socio-psychological characteristics and the structure of informal leadership in developing a simulation game scenario.

#### Game script development

Theme of the game: "Psychological influence in political advertising".

The main methods of psychological influence used in advertising include information, persuasion, suggestion. Advertising uses the full range of emotional impact, appealing to a person's desire to be healthy and prosperous, to his vanity, the desire to maintain or improve their social status, etc. The question of the legitimacy of the use of psychological means of influence in advertising today remains open.

The purpose of the game: to develop a general decision on the effectiveness and legitimacy of the use of information, persuasion and suggestion in advertising.

#### Tasks of the game:

- identify the range of problems within this topic (information, persuasion and suggestion as types of psychological influence in political advertising);
- structure the previously studied material on the proposed issues;
- activate the mental activity of players;
- adjust the development of the discussion within the proposed topic;
- develop a joint solution to the issues proposed for discussion during the discussion with the participation of players.

Game time: the game is designed for two academic hours (1 hour 20 minutes +/- 5 minutes).

#### Game script:

At the first stage of the game technique, business cards with the names of the players are handed out and students are seated on chairs set in a semicircle in the following order №№ 7, 17, 4, 5, 6, 10, 11, 12, 13, 9, 8, 2, 1, 14, 3, 15, 16. The sequence of players is determined by the conditions of the warm-up, which will be considered in the second stage of the game. Preliminary acquaintance with the members of the group allows, firstly, to prepare business cards in advance, and secondly, to distribute them quickly and in an organized manner. This saves time on greetings, which does

#### Game plan:

Stages	Actions	Time (minutes)	Props
Greeting	Development of space, acquaintance, distribution of business cards	2	17 business cards, 17 hairpins
Workout	Associations on the proposed topic (building a chain with all players)	2	The ball
Designation of the problem	Writing problems on the board, a brief description of them	1	Chalk
Organization of players	Division of students into three groups, seating at tables, explanation by consultants of the players' tasks	5	Cards with the name of the problem, stationery (paper, pens)
Discussion	Discussion of the task within each group with the participation of consultants	25	advertising posters, magazines and newspapers
Protecting the common position of the group	Speech by representatives from each group, discussion, development of common opinion	30	
Reflection	Generalization of material, reflection on an emotional level, awarding	15	20 prizes

not distract players from organizational issues. Next, the moderator introduces the participants to a team of game technicians (consultants, operator, etc.), announces the topic of the game, explains the rules, emphasizing the obligation to comply with them, and gives an attitude of friendliness towards each other.

In the second stage, the moderator gives the participants the following task as a warm-up: passing the ball along the chain, to express their associations with the concept of "psychological impact", while indicating that there should be no repetitions. Chain, giving an example, begin game technicians (consultants). With this kind of warm-up often have two main difficulties. First, the most common options are usually named at the beginning, which complicates the task of players at the end of the chain. Secondly, during the warm-up there is almost no time for reflection, which can lead to long pauses, which, one after another, do not allow participants to concentrate on the topic, and the warm-up, which aims to introduce players to the main problem of the game, just loses its meaning. The use of sociometric test results minimizes the occurrence of such difficulties in game development. Knowledge of the sociometric characteristics of group members allows you to arrange the participants so that the most active and sociable players alternate with less sociable (in this case should be based on the index of interaction, as the nature of this interaction will not be crucial), and most players having a high rate of interaction should be at the end of the proposed chain. In the study group of students who have a high index of the volume of interaction (above 0.80), 8 people (№№ 4, 7, 8, 10, 13, 14, 15, 16). The lowest indicator of this index has a student № 17, which means it is better to include him in the top five players. The other participants in the game interact with others approximately equally. Thus, the following chain is proposed: consultant № 1, consultant № 2, №№ 7, 17, 4, 5, 6, 10, 11, 12, 13, 9, 8, 2, 1, 14, 3, 15, 16, consultant № 3.

In the third stage, the moderator presents the participants with a list of the main methods of psychological influence used in advertising, which are predetermined on the board and gives them a brief description (the basic concepts are also recorded on the board). The attention of players is focused on three considered ways: informing, persuasion and suggestion.

In the fourth stage of the game, participants must be divided into three roughly equivalent subgroups. Thus, the game technician faces the task of forming three subgroups of players who, on the one hand, seek to cooperate with each other, on the other – have an element of competition, both within subgroups and within the group as a whole. In this case, it is possible to do so using data from socio-psychological (sociometric) analysis of the group. As a basis for the division of players into subgroups, two main points are proposed. One of the necessary conditions for the formation of subgroups is the distribution of negative leaders in different subgroups. In this case, this is especially true of leaders №№ 15 and 16, because there is the closest connection between them. Second, positive leaders must unite players in each subgroup. Thus,

when developing a game scenario, it is advisable to structure adequate leadership in the group.

Taking into account the socio-psychological characteristics of the group members, the players were divided into three subgroups: subgroup A included №№ 4, 6, 9, 12, 13, 15, subgroup B – №№ 1, 2, 8, 14, 16, 17, in subgroup C – №№ 3, 5, 7, 10, 11. Thus, each subgroup got both positive and negative leaders. Moreover, since there are relations of cooperation between the positive and negative leaders of each of the subgroups, it significantly reduces the share of destructive influence of negative leaders on the group and increases the influence of positive ones.

When dividing players into subgroups, it is necessary that the players are sure that the distribution is random. Technically, this can be done as follows: it is necessary to prepare in advance three groups of cards with the names of the proposed problems for discussion, and the cards should be folded in the right order, so that when issuing them to players in order, each participant received a card. Then the players with consultants sit at three tables, according to the received cards. Consultants ask participants to answer the following questions: what is the essence of suggestion (persuasion, information), whether the proposed method of psychological influence is effective in terms of advertising, how legitimate the use of suggestion (persuasion, information) in advertising, what is the relationship between legitimacy and effectiveness or other way of psychological influence in advertising.

In the fifth stage, players acquaint consultants with their ideas, consultants adjust the course of the discussion, provide factual information on the problem (dates, names of organizations, companies, data on advertising prices, etc.), advertising posters, magazines, newspapers and ask leading questions. Involve in the discussion of all participants will allow the system of leadership within each subgroup formed in connection with the artificially created situation.

Then one representative from each subgroup presents the results achieved during the discussion, all participants of the game are involved in the discussion. During the general discussion, negative leaders (№№ 5, 15, 16) will express the point of view developed during the discussion within their subgroup. This in turn will help to develop a common opinion on the issues under discussion, because, on the one hand, the discussion will include an element of competition that enhances the mental activity of players, on the other hand, close cooperation of negative leaders with positive ones within their subgroup will not allow full development. unity in the team on the issues under discussion.

At the final stage, the moderator summarizes the game, briefly summarizing what was said by the participants and making amendments, thanks the players for participating, conducts reflection on an emotional level, and game technicians reward all participants in the game.

**Conclusions from this study and prospects.** Thus, in the course of this study in practice the possibilities of using the results of the sociometric test in the development of a simulation game scenario were tested. The use of sociometric

information allowed to optimize the time and organizational aspects of the scenario development, which in turn helps to most fully reveal the thematic content of the game. The possibilities of sociometric optimization of the simulation game scenario are not

limited to the above. In our opinion, it is promising to take into account the socio-psychological aspects of the game, related to the problem of collective decision-making, which in the game is manifested in the form of the so-called "chain of decisions" (8).

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