

THE RELATIONSHIP BETWEEN ORGANIZATIONAL CULTURE AND INNOVATION IN THE OPINION OF THE MEDICAL STAFF OF PUBLIC HOSPITALS¹

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***Abstract.** Culture organization appears to influence the extent to which the innovations are stimulated in the organization. There is therefore a need for a closer look at the nature and types of organizational culture in relation to innovation in the organization. In this article, attention is focused on the study of the relationship between organizational culture and innovation, built on the opinions of medical personnel (doctors and nurses) of public hospitals operating in Poland. The results of tests using correspondence analysis clearly indicate the existence of relationships between the variables. With the opinions of the respondents, the different positions of doctors and nurses in the tested range were confirmed. Physicians perceive a greater share of culture role in raising the level of innovation. In turn, in the opinion of nurses, greater share in raising a culture of innovation has got hospital personnel culture.*

Keywords: organizational culture, innovation, public hospital.

1. Introduction

Both theory and practice increasingly point to innovation as an important factor in the development. At the same time research on the determinants of innovation emphasize the importance of organizational culture in creating a climate for innovation. These statements are becoming increasingly important to all organizations including hospitals, which in spite of its audience are even forced to develop the capacity for innovation. Thus, in the context of successful innovation in strategy, technology, work methods, a detailed analysis of the values, beliefs and behaviors of

¹ This paper is financed by the National Science Center awarded on the basis of Decision No DEC -2011/03/B/HS4/04544

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organizational (corporate culture) is required. It is important to know what types of organizational culture are to stimulate openness to change, a higher degree of risk taking and incentives for creative activity. It should be stressed out that this problem is not sufficiently present in studies conducted both in Poland and in the world, including in relation to the public sector. Meanwhile, access to innovation is crucial for the success in the implementation of changes in the management of modern organizations, particularly public hospitals, which for almost 20 years are undergoing constant transformation processes. The purpose of the article was to examine the relationship between organizational culture and the level of innovation in Polish hospitals. The study was conducted in the third quarter of 2014, among medical staff (doctors and nurses), based on the research questionnaire.

2. The hypothesis and methodology of the study

The implementation of the objective set at the beginning of the work is related to the attempt to answer the basic research question, i.e. whether there is a relationship between organizational culture and innovation in a public hospital? The study adopted the concept of organizational culture that distinguished four types of organizational culture: power, roles, tasks, and person [1]. The choice of this concept was dictated by the fact that in interviews with the representatives of free medical workers in surveyed hospitals hospital culture of the organization by categories of management, staff roles, its powers and duties was frequently reported, the treatment of staff by management, relationships between staff, responsibility or characteristics of individual and group job. Assuming the above typology is worthwhile to briefly describe the types of organizational culture. The culture of power is focused on the leader of the organization. Power occupies a central place here, chooses collaborators, rewards and punishes according to his/her own code of conduct. The organization of the culture of power treats subordinates as subjects. The importance of people, their creativity and participation in deciding are low. Relations between employees are based on the large power distance and strong competition. Organization protects its territory, trying to dominate the environment as it is competitive and uncompromising. The culture of role is a bureaucratic

culture where the emphasis is placed on the legality of its actions and responsibility. In this culture, the position is more important than personality. Responsibilities and privileges are clearly defined and strictly dependent on the position. Existing procedures, rules and patterns of action, which employees must obey, in return give them a sense of security, while at the same time limit the independence and creativity. The role of each member of the organization is clearly defined. The success of the organization depends on whether individuals will fulfill their roles well. Tasks-oriented culture is characteristic for the matrix organization. It has been presented as a grid (network), and people are located in various locations depending on the tasks treated as a priority. In the culture of the tasks the idea of working in a team is valued, and those teams are built for specific projects, therefore they seek to achieve a common goal. The main focus is on the result of the work (project, task). The effort is focused on gradual, planned development. Organizational task – oriented culture is characteristic for organizations that exist primarily to meet the needs of its members. The role of the organization is reduced only to organize the workplace and help employees to achieve their individual goals. At the same time the unique character of public hospitals is stressed out, which is associated with both the peculiarity of the health care market, as well as public hospitals [2]. The peculiarity of the healthcare market relates to differences between this market and markets of other goods [3]. Generally, health is a specific value for a particular ethical dimension, not a commodity, there is also the price – is priceless. Access to medical services is not governed by market mechanisms, such as the purchase of standardized services, but on the basis of a guarantee of the Polish Constitution. In turn, the public hospitals are associated with their strategic role in the system and the features distinguishing these entities from business organizations [4]. It should be emphasized that the goals of public hospitals are numerous, multi-dimensional and often difficult to reconcile, for example equality, justice and efficiency. These units are subject to excessive political interference, specific interest groups and the mass media. In addition, they are characterized by different criteria of success – and they are not financial criteria, because public hospitals are not subject to the risk of elimination by competition. At the same time public hospitals are of excessive tendency of the authorities to intervene, which translates

in many cases in less autonomy to managers [5]. Generally, public hospitals are characterized by highly bureaucratic organizational structure and organizational culture has the characteristics of a weak, negative, conservative and hierarchical structure [6]. In the context of the specific characteristics of the organizational culture hospital draws attention to the problem of innovation [7]. Based on the above assumptions and past experience empirical thesis appears that there is a relationship between organizational culture and innovation in a public hospital. In order to verify this thesis, a survey was conducted, in which participated 237 respondents - employees of four public hospitals operating in the north - eastern Polish (choice of hospitals was intentional, resulting from the fact that only those hospitals have agreed to conduct the study). Among the respondents 22% were managers, 22% doctors, 48% nurses and midwives, while 8% of respondents did not specify their position. Due to the fact that the article is not the place to publish the whole test results, which are very extensive, it shows only a part of the considerations for the doctors and nurses. The study used correspondence analysis as a method of combining the reduction in size of population and the ratings reflected on the perceptual map of objects in terms of their selected features [8]. As an advantage of this method, the possibility of clear, graphical presentation of the co occurrence of categories of variables is indicated. Interpretation of the results is to assess the position of points showing the categories of variables in the graph using such elements as the position of the point to the centre of projection, the position of the point relative to other points defining the categories belonging to the same features, the location of a point relative to the point of describing the category of other features. Correspondence analysis was used in relation to previously noted four cultural variables (four types of cultures: power, role, tasks and person) and assess the level of innovation. The study started with the determination of the degree of dependence and independence by using chi-square test. In addition, for greater readability Czaprow index was used. The calculations were performed using the STATISTICA 10. The results of the significance test is presented in the form of tables and then subjected to critical analysis.

3. Results and discussion

As indicated in the previous chapter from the point of view of the objective of this publication is crucial to know the opinion of the medical staff (doctors and nurses) on the relationship of the existing organizational culture to the level of innovation in hospitals. All results are presented in a two-dimensional system, explaining the bonuses in each case, except in one case – more than 60% of the inertia. At the outset the level of innovation hospitals was evaluated (Fig. 1).

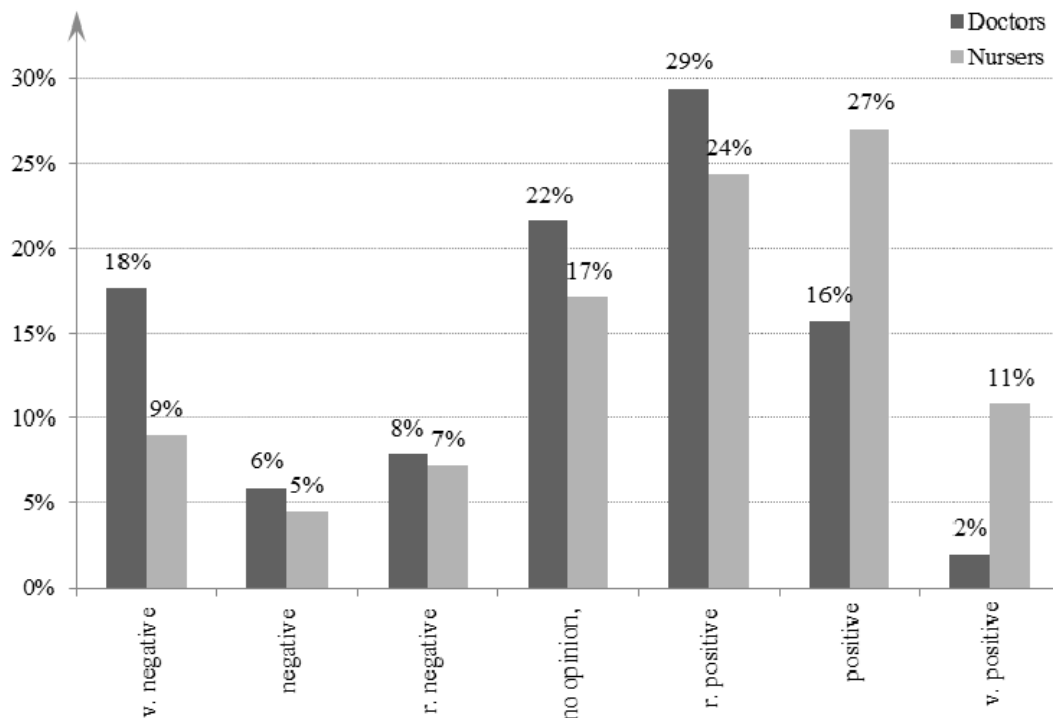


Figure 1. Assessment of the level of innovation in the hospitals in the opinion of the doctors and nurses (in %).

The distribution of the data shows that there are significant differences in the opinion of doctors and nurses. According to the nurses, the largest percentage of indications concerned the assessment of positive and very positive (38%), in contrast to the physicians (18%). A similar situation exists in relation to the very negative ratings, where nurses' interest rate was 18% and 9% for doctors. Such a breakdown of the

results confirms the significant differences in the opinions of these two professional groups, which in turn may translate to these professional groups.

Then opinions on the types of organizational culture characteristic for the studied hospitals were analyzed. Distribution of ratings of physicians in this topic shows Figure 2.

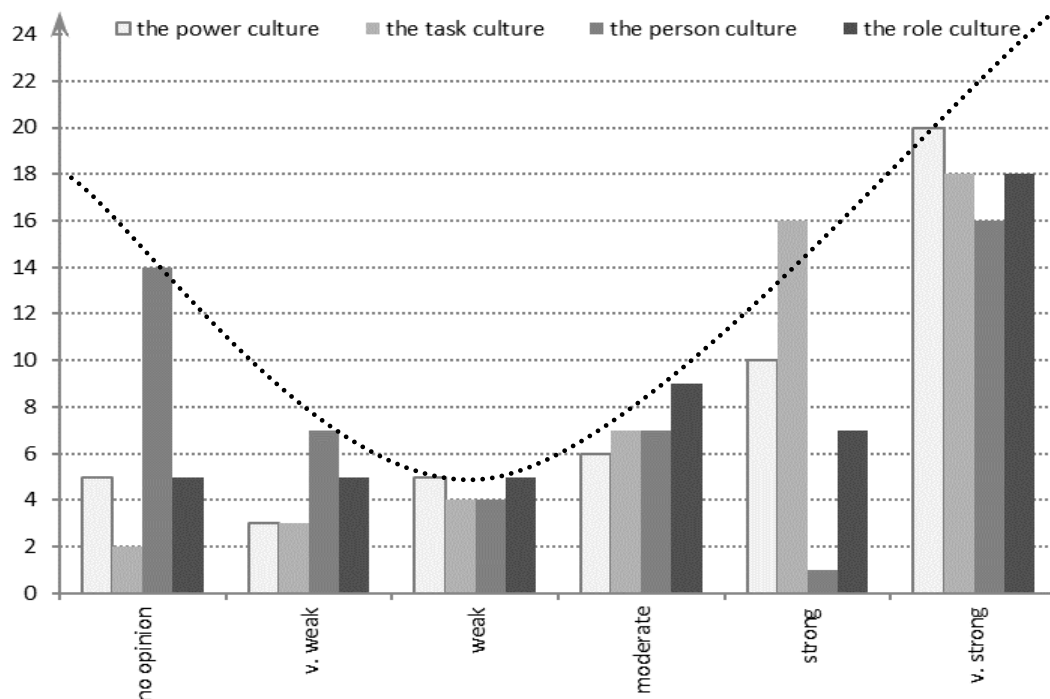


Figure 2. Assessment of organizational culture type in the opinion of doctors (in numbers).

Source: *Own study.*

The distribution of the data shows that the largest number of responses (very strong and powerful) tasks related to culture and the culture of power and the lowest rated culture of partnership. Data distribution resembles a line of type U, when the differences in the selection of particular types of cultures are not substantially different. This may indicate that the existing public hospital organizational culture is a specific set of features is not located in the universal models.

In contrast, other opinions represent nurses (Figure 3).

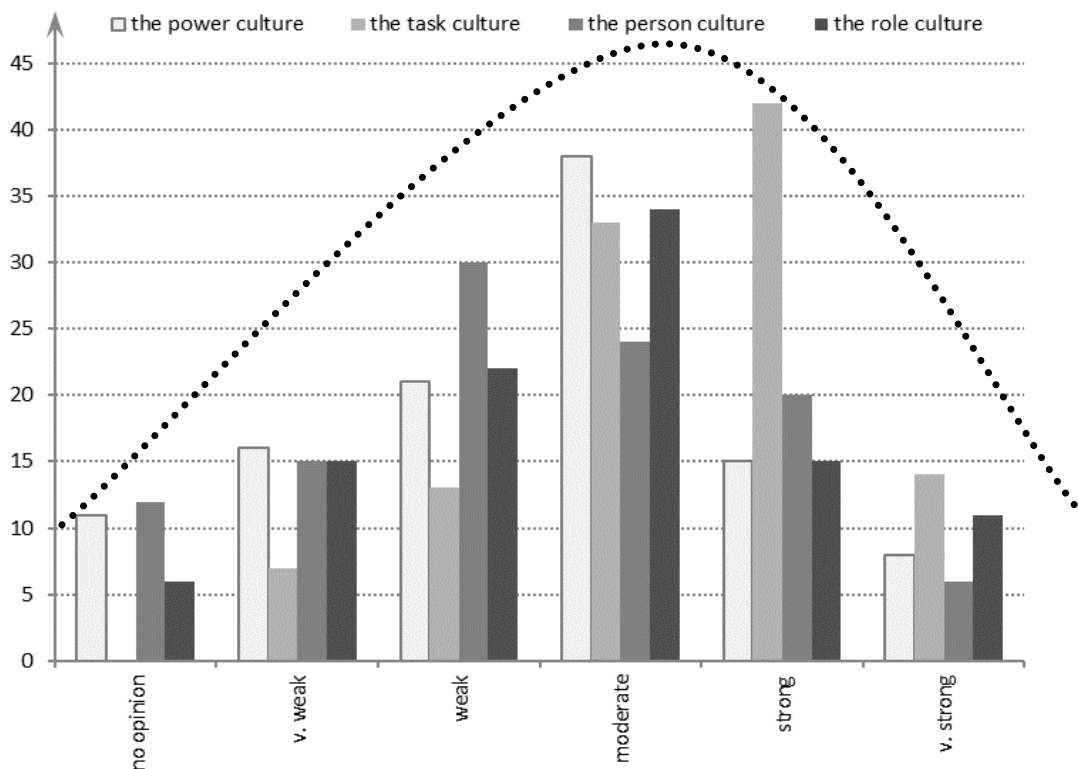


Figure 3. Assessment of organizational culture type in the opinion of nurses (in numbers).

Source: *Own study.*

In case of indications of organizational culture types by nurses, largest number of responses (very strong and powerful) was related to culture and the culture of power and the lowest rated culture of partnership. The nurses were not as extreme in their assessments as doctors (line type inverted "U"). Their assessment grouped around a weak, moderate and strong. The largest number of indications related to culture, tasks and other types of cultural rated similarly. The final essential element of the assessment of the empirical analysis was an attempt to investigate the linkage between the type of organizational culture and the level of innovation of the hospital received by medical personnel. Summary of linkages between different types of culture with the assessment of the level of innovation in a group of doctors are presented in Table 1.

Table 1.

Presentation links assessing particular types of organizational culture in a group of doctors.

The types of culture	Chi-square	Degrees of freedom (df)	The significance level	Czuprow dependence index
The power culture	42,2804	30	0,0678	0,3853
The task culture	52,9510	30	0,0060	0,4312
The person culture	45,6899	30	0,0333	0,4005
The role culture	66,8808	30	0,0001	0,4846

Source: *Own study.*

The distribution of the data it is clear that, in the opinion of physicians, Czuprow index is higher for the culture role than for other types of cultures. However, the differences in the statement of the different types are not significant, which may indicate the diverse opinions of doctors and at the same time the lack of a uniform type of culture in relation to public hospitals. Due to slight differences in the selection of the various types of organizational culture by doctors, the impact of various types of culture on the level of innovation in this sector should be analyzed. For the purposes of correspondence analysis it was assumed that the coordinate verse was the level of innovation of the hospital, and coordinate column was a particular type of organizational culture. The graphical presentation of the different levels of innovation assessment adopted 7-step scale, where answers were: very negative, negative, rather negative, no opinion, rather positive, positive, and very positive. For the evaluation of particular types of organizational culture there was adopted a 6-degree scale, where responses appear as none, very weak, weak, moderate, strong and very strong. All results are presented in a two-dimensional system, explaining where in each case, except in one case, the level of inertia was over 60 %.

Thus, the link between the assessments of the role culture and level of innovation in the opinion of physicians presents Figure 4.

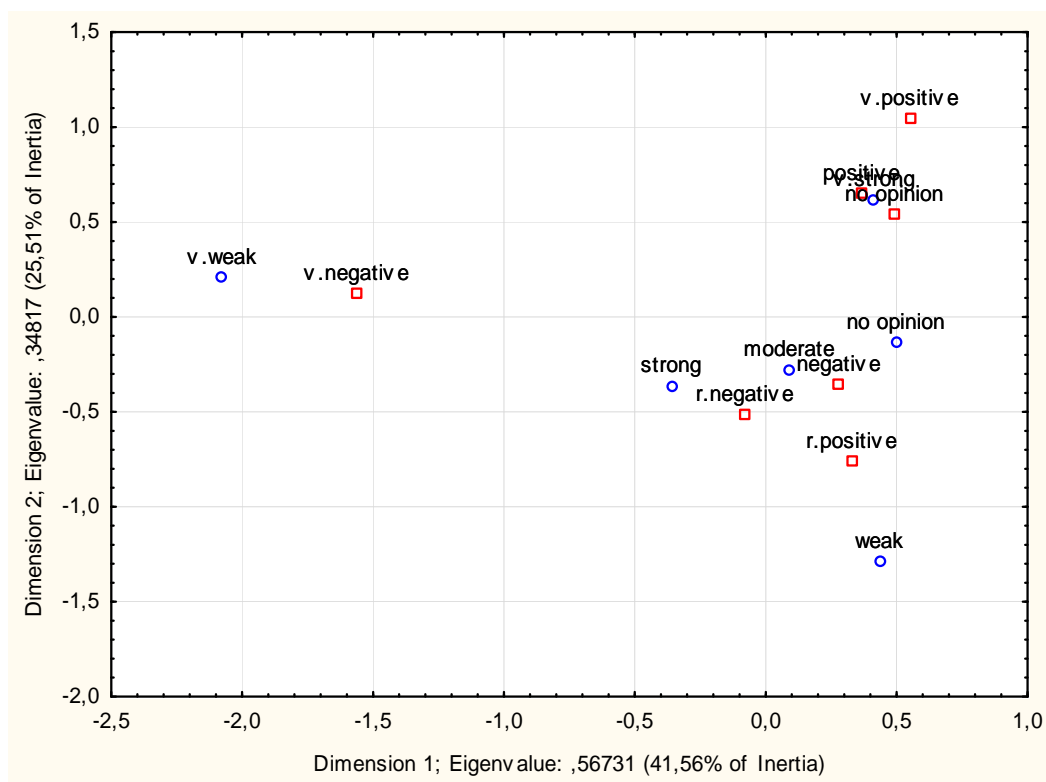


Figure 4. Presentation of the link between the assessments of the role culture and level of innovation in the opinion of physicians.

Source: *Own study.*

In the analysis of the links between the assessment of the level of innovation and the assessment of the role of culture, a two-dimensional projection area helps explain 67 % of the total inertia. In the above figure, we see that the horizontal axis that a higher proportion of inertia, characterized in that the right side of the centre axis is most ratings, while on the left side has extremely negative doctors. Those who very low assessed innovation, also low evaluated the role of culture. On the other hand, taking into account the centre of the vertical axis (having 25% of the inertia) shows the relationship between high assessment of innovation or lack of opinion on the subject and a strong evaluation of the role of culture. In this way, physicians formed three groups of workers. One include those who have a very low rate of innovation and the role of culture in the second are extremely positive reviews also take into account the undecided, the third remaining respondents.

Another figure 5 shows the link between the assessments of the task culture and level of innovation in the opinion of physicians.

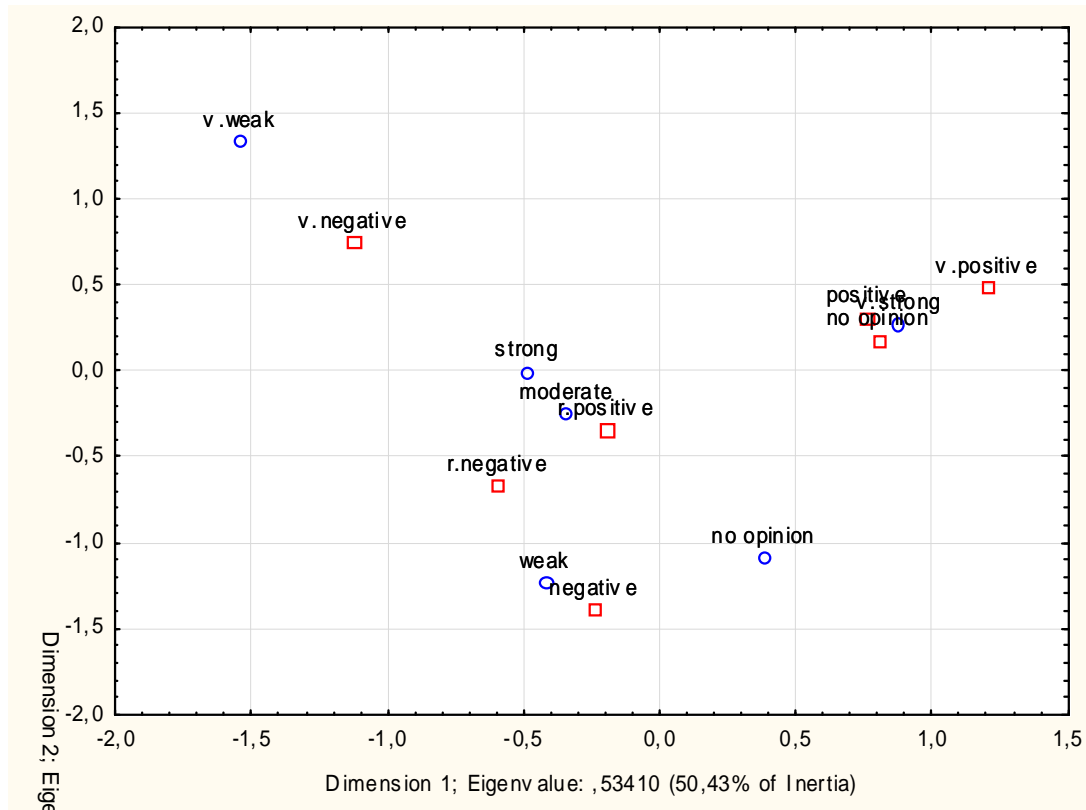


Figure 5. Presentation of the link between the assessments of the task culture and level of innovation in the opinion of physicians.

Source: *Own study.*

In the analysis of the links between the assessment of the level of innovation and cultural assessment task, a two-dimensional projection area helps explain 80 % of the total inertia. In the above figure, we see that the horizontal axis that a higher proportion of inertia, characterized in that the right side of the centre axis is extremely positive, and the positive evaluation of innovation and very strong culture evaluation task. It is interesting that people do not express the opinions of innovation, very highly assessed the culture of tasks. The far left are negative opinions with respect to the analyzed variables, and locate near the centre of the other, while on the left are extremely negative opinions of doctors. Just as the assessment of compounds culture of innovation tasks are visible 3 groups

with a similar distribution of responses as shown in Figure 3 for the role of cultural links with innovation.

The next description is to link assessment with the assessment of the person culture and level of innovation in the medical group (Figure 6).

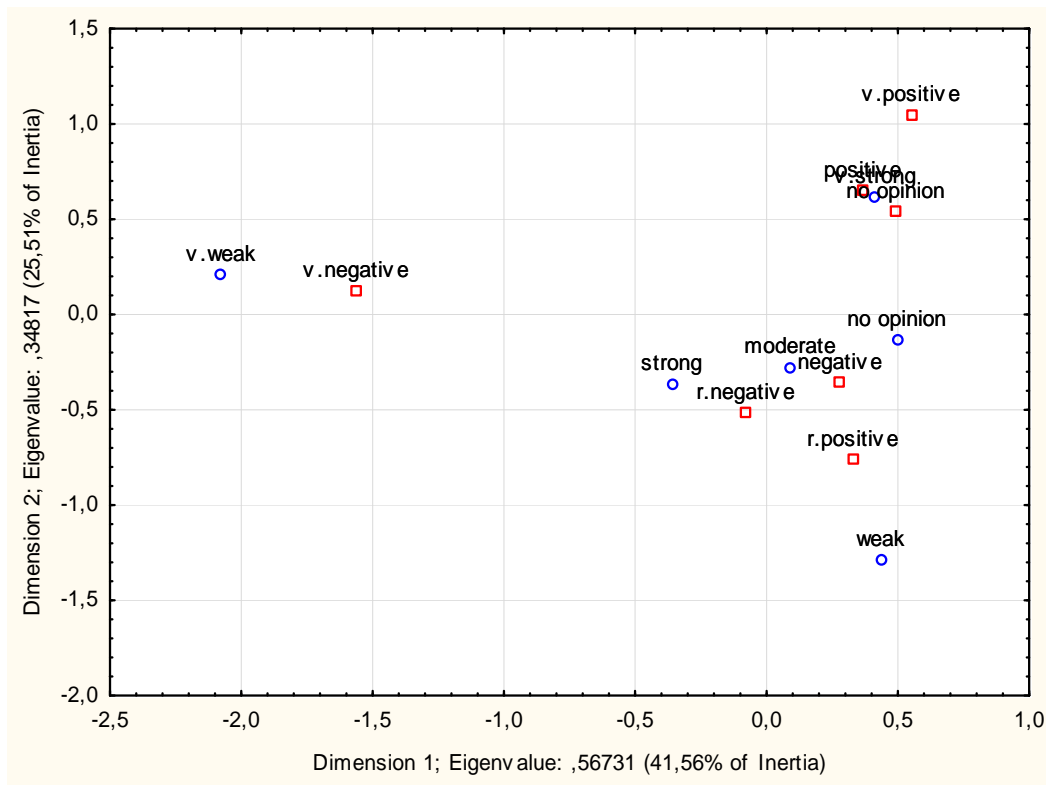


Figure 6. Presentation of the link between the assessments of the person culture and level of innovation in the opinion of physicians.

Source: *Own study.*

In the analysis of the links between the personal culture assessment and the assessment of the level of innovation culture, two-dimensional projection area helps explain 67 % of the total inertia. In the above figure, we see that the horizontal axis that a higher proportion of inertia, characterized in that the right side of the centre axis is extremely positive and positive feedback reviewers innovation and concerning personal culture aside, the extreme left and a negative feedback terms of the evaluation of innovation and very weak relative to the personal culture, and

locate near the centre of the other. As with the earlier types of evaluation of the compounds of the cultures, they are shown in 3 groups of similar distribution of answers.

The last of the studied types of innovation culture is a type of culture of power (Figure 7).

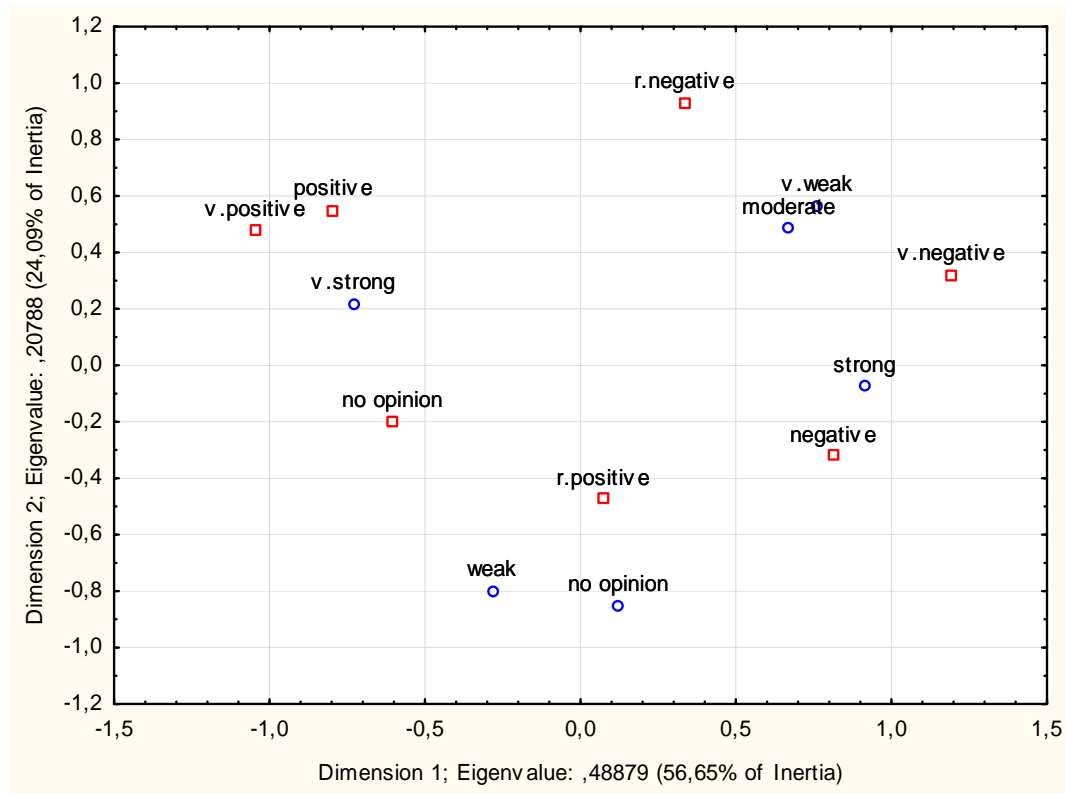


Figure 7. Presentation of the link between the assessments of the power culture and level of innovation in the opinion of physicians.

Source: *Own study.*

While the earlier evaluation of correspondence between the types of cultures and assessment of innovation was similar, whereas in the case of the culture of power, the situation is somewhat different. Relationship between the assessment and the assessment of the level of innovation culture of power allows a two-dimensional projection area explaining 81 % of the total inertia. In the above figure, we see that the horizontal axis that a higher proportion of inertia, characterized in that the right side of the centre

axis are extremely negative, negative and rather negative feedback, which correspond to the evaluation culture weak, moderate, but strong. In turn, the left side of the axis we find the relationship between very positive and positive assessment of innovation and very strong culture of power. These links also are arranged in three groups, although different from each other.

In relation to nurses' assessment of the relationships between particular types of organizational culture and innovation of the hospital looks different (Table 2).

Table 2.
Presentation links assessing particular types of organizational culture in a group of nurses.

The types of culture	Chi-square	Degrees of freedom (df)	The significance level	Czuprow dependence index
The power culture	28,1802	30	0,5609	0,2124
The task culture	17,2954	24	0,8357	0,1760
The person culture	49,6102	30	0,0137	0,2819
The role culture	40,9181	30	0,0884	0,2560

Source: *Own study.*

As the table shows, in the opinion of nurses the highest dependency Czuprow index applies to personal and cultural role. It is a different indication than for doctors, which may be due to other cultural values adopted by this group. Distribution of the person culture and the level of innovation is in Figure 8.

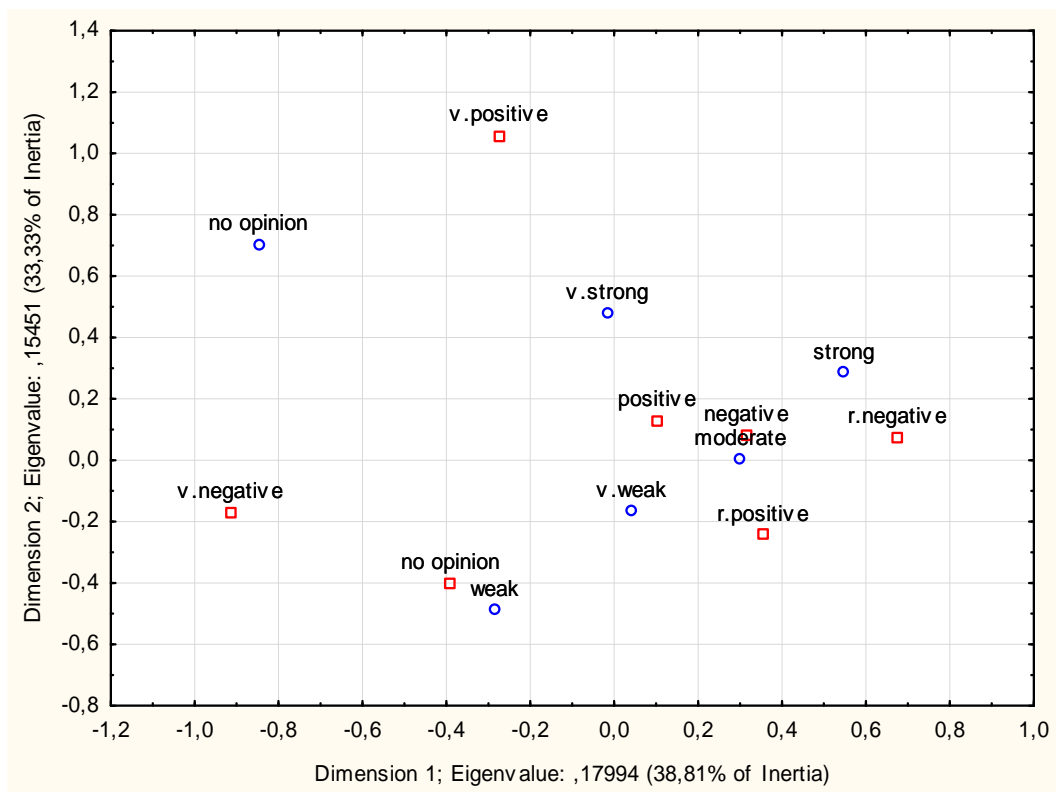


Figure 8. Presentation of the relationship between the person culture and level of innovation in the opinion of nurses

Source: *Own study.*

In the analysis of the links between the assessment of the level of innovation and the assessment of the person culture, a two-dimensional projection area helps explain 73% of the total inertia. According to the data presented in Figure 8 opinions of nurses are more conservative, tending to a negative assessment, evaluation or negative innovation corresponds to very poor assessment of the person culture formed a clear one grouping. None, however, in this group the extreme opinions regarding innovation (both positive, what negative).

Reference to the relationship between the role culture and level of innovation is presented in Figure 9.

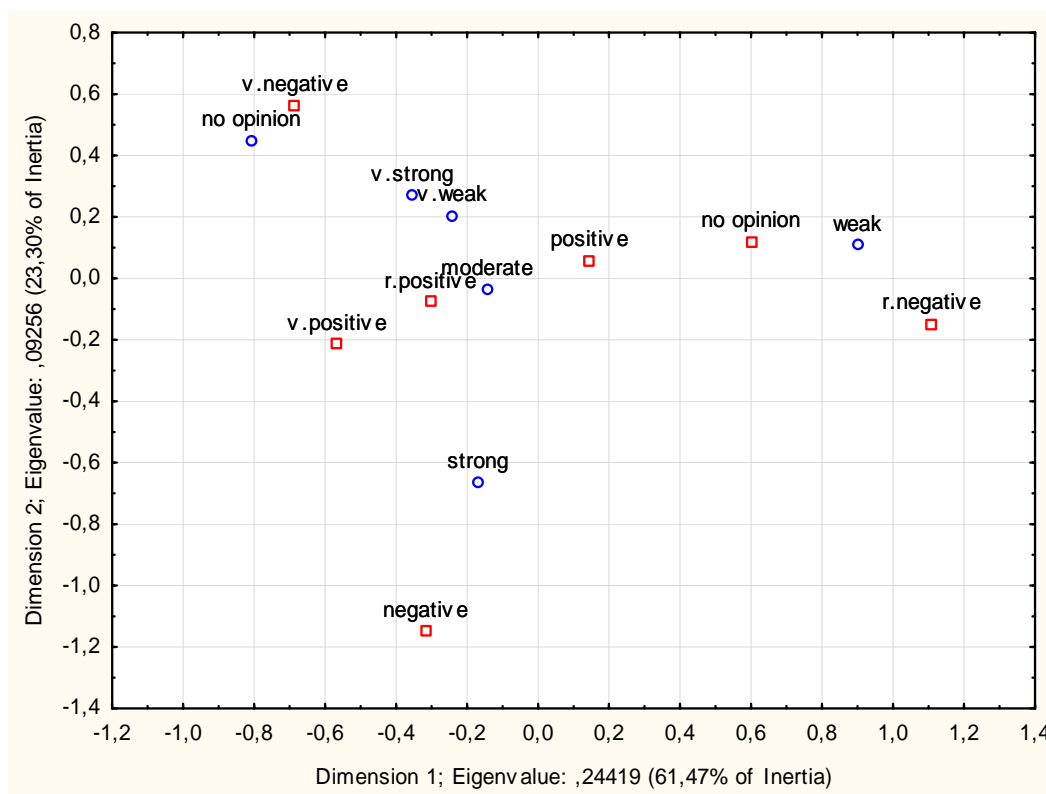


Figure 9. Presentation of the relationship between the role culture and level of innovation in the opinion of nurses.

Source: *Own study.*

In the analysis of the links between the assessment of the level of innovation and the assessment of the role culture, a two-dimensional projection area helps explain 85% of the total inertia. In the above figure, we see that the horizontal axis that a higher proportion of inertia, characterized in that the right side of the centre axis is rather negative opinions and no opinion concerning the evaluation of innovation and opinions regarding poor culture role. After the extreme left side we have the statement of a negative assessment of innovation with the lack of assessment in relation to the cultural role. Closest to the centre locate the positive assessments in relation to the level of innovation and moderate in relation to the cultural role.

4. Conclusion

Summing up the considerations carried out, it should be emphasized that the presented results are only clipping of total above which is still underway. However, applications that arise after the analysis already allow for confirmation of the thesis that there is a relationship between organizational culture and innovation in hospitals. The problem with these relationships seems therefore considerable. Especially that this medical staff (their value, attitudes and behaviors) decide making activity towards innovation and stakeholders from public hospitals are increasingly looking to the commitment to improve the process of providing health care.

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