

### **1.3 ECOLOGICALLY ORIENTED INNOVATIVE CULTURE OF A SOCIETY AS A PREREQUISITE FOR SUSTAINABLE DEVELOPMENT: PERSPECTIVES FOR UKRAINE**

The history of humanity suggests that the economic development without ecological limits causes the global environment worsening and even threatens the human civilization. The innovations and innovative activities from the basis of various ground of some organizations, fields, states and the human civilization as a whole. The analysis shows that all innovations are of dual nature: on the one hand, they promote production efficiency and consumption growth and on the other hand, they raise the problem of the ecological limits in the social and economic development processes on the higher level. For example, the possible ecodestructive impact of modern innovative products and technologies, e.g., genetic engineering, nanotechnologies, nuclear fusion, which take first positions in technological progress (TP), may be stronger than in traditional ones. The practice shows that innovative way of development has no alternatives, and related ecological problems, on level with social and economic ones, need innovative ecologization activity. One of the main preconditions of its success is to create and develop the ecologically oriented innovative culture. According to Shypulina, 2010, innovative culture is a social and cultural mechanism of the innovative human society regulation.

The problems of innovative culture creation were investigated in works of many scientists, including Bondar-Pidgurska, Korotych, 2012; Balabanov, 2004; Kameron, 2001; Shane, 2007; Nickolaev, 2002; Zaharchyshyn, 2008; Patora, Tsymbalist, 2008; Zubenko, 2008. Thereby the concept of society and organization innovative culture and its influence on innovative activity was developed; the main elements and the place of innovative culture in the corporation organization culture are also described. However, problems of ecologization of innovative culture were not practically investigated, and this doesn't promote use of present mechanisms and doesn't develop new social and cultural mechanisms of the ecologically oriented innovative conduct of innovative subjects' regulation. It is a problem of primary importance for Ukrainian conditions, where one is looking for ways of perspective innovative development of the country which would realize its still high competitive advantages. Thereby chosen fields have to be in sustainable development, because the traditional fields, which are the most important for the budget revenue (mainly, iron industry, inorganic chemistry, and machinery) are ecodestructive and increase social and economic problems.

Thus, the main goal of this research is to investigate the prerequisite of the ecologically oriented society innovative culture in Ukraine as a base of the sustainable development.

According to the Law of Ukraine "On innovation activity priority directions", innovative culture is defined as an innovative potential component which characterizes the level of educational, cultural and socio-psychological training of the person and society as a whole to perception and creative implementation the idea to develop the economy on innovative basis. Innovative culture development of the society is determined as one of the strategic priorities in innovative activity in Ukraine. The value of innovative culture is increasing during the transition from an industrial economy to the knowledge economy where information and knowledge (in this case, ecological and economic) are the main means and subject of social production; they are also a limiting factor in the development and replace capital as the surplus value source. In these circumstances, it is necessary to format the sustainable traditions in society to receive new ideas, abilities and willingness to use it comprehensively for general progress in adjusting the environmental, social and economic interests of society.

Society innovative culture includes [17] 3 constituents which have such functions:

- innovative means – to develop new types of the innovative conduct on basis of patterns of innovative activity inside the social culture or introduced outside;
- selective means – to select once again created or borrowed innovative conduct models, which respond to the society needs on the fixed stage of its development;

– broadcasting means – to transfer sustainable types of innovation from the past to the future, which have been recognized impractic and got into the value system of the society.

Let consider them (with regard to Ukrainian realities) from the point of view of the existing level and perspective possibilities of the ecologization.

***Creation of the ecologically innovative conduct*** occurs in two directions: ecologization of forming innovations (development and production); ecologization of consumption innovations (usage).

The results of the realized investigations show that environmental compatibility of the production and its manufacturing techniques are viewed by the commodity producers as a competitiveness factor. Particularly [6], 67 % of the questioned heads of the enterprises in Sumy region, in Ukraine, where the biggest machine-building and chemistry plants are situated [11] suppose the environmental compatibility as a competitive advantage, and 44 % – ecological production technologies. Thereby 72 % of the heads are ready to invest in environmental compatibility of techniques, and 83 % – in production ecologization. The detailed analysis showed that 40 % of respondents consider improvement of environmental impact on production processes without any essential changes in production structure is of the highest priority; 31 % – producing and use of environmental protection means from its harmful impact; 29 % – producing and consumption of the production which allow to decrease позволяет снизить material- and power intensity, is more ecological than traditional one.

But this manufacturer's potential readiness does not always transfer into real action because of limited finances, high prices of ecological technologies (as a rule, foreign), inefficiency of state support mechanisms, and so on.

Consumers of practically all social strata in Ukraine understand the necessity of resolving contradictions between the economic increase and environmental preservation [6]. The author's research shows that, in Ukraine, ecologically oriented consumer is actually formed: from 40 % to 90 % of the population are ready to pay markup for indies compatibility (depending on product kind) [7].

Thus, one may ascertain the high level of the innovative constituent of the ecologically oriented culture in Ukrainian society development.

***Selection of newly created or borrowed ecologically oriented innovative conduct models***, at present, is provided with proper motivation, and is divided into 2 groups of indies: environmental retraction indice and environmental pressure indices.

Environmental retraction indices are as follows:

– environmental awareness of all levels of population which consider the importance of solving nowadays environmental problems. The results of our survey showed that about 63,12 % of people are troubled with environmental problems and 24,3 % – are partially troubled [6]. One can see the same situation in the developed countries [15]: about 66 % of Europeans and 80 % of Japanese are worried about environmental problems.

– readiness of some people to buy eco-products despite their higher prices (fig. 1.3);

– manufacturers' understanding of the importance (from the point of view of competitiveness) of production ecologization and readiness to invest in it (see above).

Thus, environmental retraction indices have a great impact on the selective function of the ecologically oriented innovative conduct models.

However, environmental pressure indices (which include [9] legislative limits and recommendations; requirements of the national and international standards; costs effectiveness, since non-ecological production can be burdened with many costs for waste refinement and utilization, compensation payments to workers for harmful work conditions, payments for environmental services and fines, etc.) are practically non-operational or are of little importance in Ukraine.

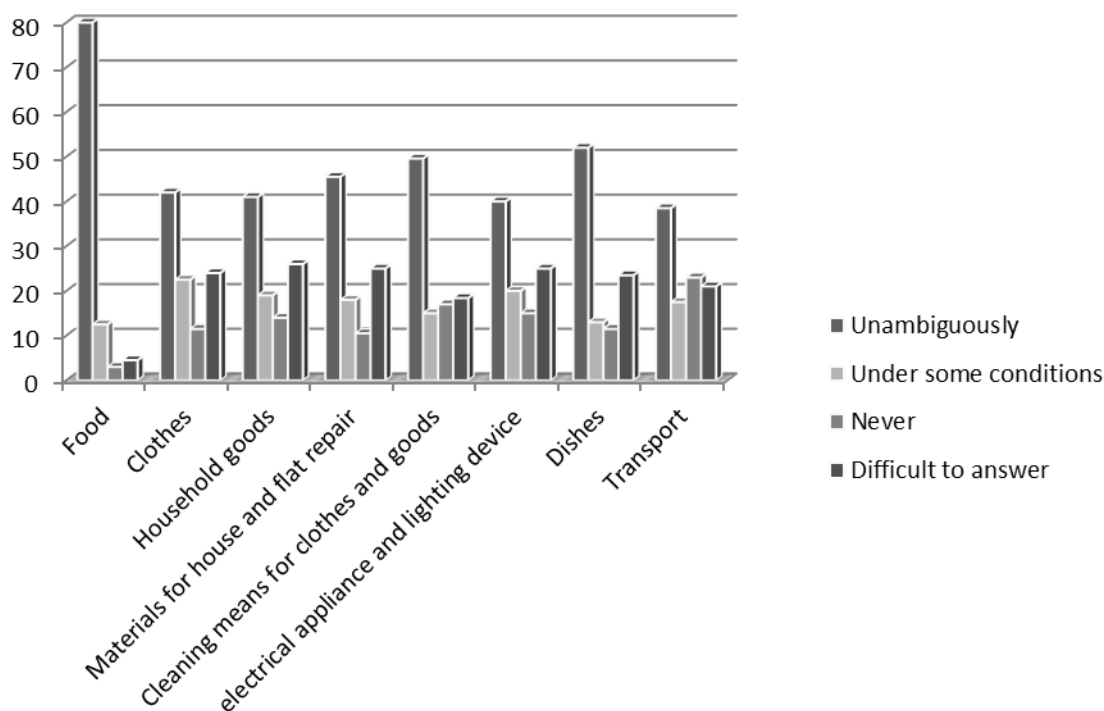


Figure 1.3. Consumers' readiness to pay markup, % [6]

From this it follows that Ukraine has one-sided developed selective constituent of the ecologically oriented innovative culture: adequate impact of environmental retraction indices and poor impact of environmental pressure indices which, by the way, is practically graded by corruptive Ukrainian economy constituent and lack of society development, help to avoid these indices.

*Transfer of the sustainable innovative conduct types from the past to the future* is provided by the following mechanisms [8]:

- informing people about negative consequents of nonecological goods and technologies, use present environmental conditions, about ecological and non-ecological goods (production and technologies) and their producers, events related to the environmental protection;
- informing people and manufacturers about ecological goods and technologies, their characteristics, about benefits of production ecologization, adequate consumption (use), and so on;
- formation of social norms and values which would demonstrate life success of the developers of environmental innovations and of environmentally friendly innovative activities producers tolerant relation to the innovators' success, wish to follow their example;
- formation of the producers' (purchasers') attitude to the consumers' environmental needs due to the principle "the consumer is always right";
- stimulation (formation) of economic mechanism for the producers' and consumers' ecological conduct: state order, programming, ecological projects and financing programs, tax reductions and credits, ecoinnovations funding;
- mechanism of administrative regulation of the eco-friendly production and consumption: production standardization, rationing of goods and technologies, environmental expertise, licensing and restrictions, administrative responsibility, embargoes, antimonopoly regulation, control, etc.;
- organizational supplying mechanism: environmental education, environmentally friendly innovative infrastructure, and so on.

The analysis shows that broadcasting function of the ecologically oriented innovative culture is unstructured in Ukraine. It is often chaotic, and sometimes introduces disproportion between its elements.

Assuming that the ecologically oriented innovative culture consists of subsystems, we created a pyramid scheme of its function realization priorities, described in the fig. 1.4. The levels of the pyramid scheme demonstrate the main idea of the selected functions.

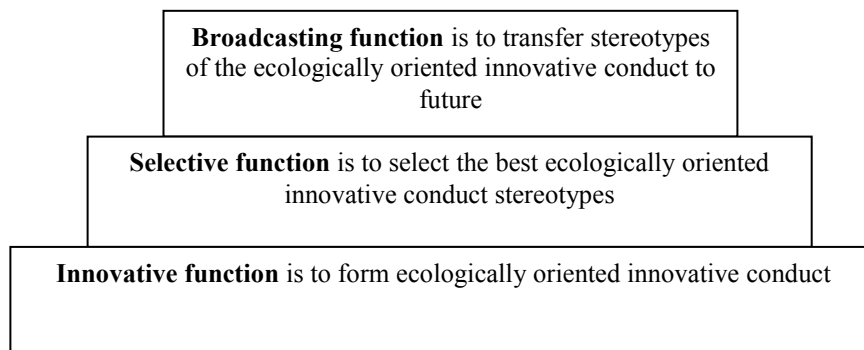


Figure 1.4 – Pyramid scheme of realization of ecologically oriented innovative culture function  
[Author's adaptation based on 6; 11]

Taking into account the results of the above analysis, we must say that the great part of the ecologically oriented innovative culture (innovative constituent) has been already formed in Ukraine; the selective constituent is being formed now (although it is one-sided: one can observe strong activity of environmental retraction indices and weak activity of the environmental pressure indices), and the basis of the broadcasting constituent is also being formed but in chaotic and unstructured way.

Depending on the research results, one may come to a conclusion, that there is a process of ecologically oriented innovative culture formation in Ukraine which conforms to the pyramid in the fig. 1.4. The market mechanisms play an important role in it, and at the same time the state regulation and stimulation mechanisms are not practically involved, that's why it doesn't allow to control the process formation. Activation of the ecologically oriented innovative culture process formation needs the development of the effective and operative mechanisms of its state support and stimulation.

Also, one should consider that innovative culture (including ecologically oriented) is one of the mechanisms to create favourable conditions for the innovative activity. In general, it is formed by the following mechanisms [18]:

1. Mechanisms which define the vector of the favourable conditions for innovative development (changes control; leading development).
2. Mechanisms which form the grounds for the innovative and favourable environment (innovative activity organization; *innovative culture formation*; innovative activity motivation).
3. Mechanisms which form the resource, a constituent of the innovative and favourable environment (innovative activity financing; innovative risk management).
4. Mechanisms which agree with interests of the innovative process subjects.

Innovative culture is also considered as the subsystem of the national intellectual capital which, in turn, is viewed as a subsystem of its innovative development potential (fig. 1.5).

From the above it follows that the processes of innovative culture formation and development in Ukraine, its intellectual capital and potential of the state innovative development occur in parallel and mutual coordination.

Thus, the basis of innovative culture are formed at the national level. The authors consider it as a combination of accumulated knowledge and experience of the staff at Ukrainian enterprises and institutions, its opinion, behavior and relations between managers, engineers and technical workers, workers, their motivative system, existing procedures etc, which characterize

the level of favorability to innovations by individual workers, groups of workers (units) and the state as a whole, to turn them into new products, technologies and management decisions.

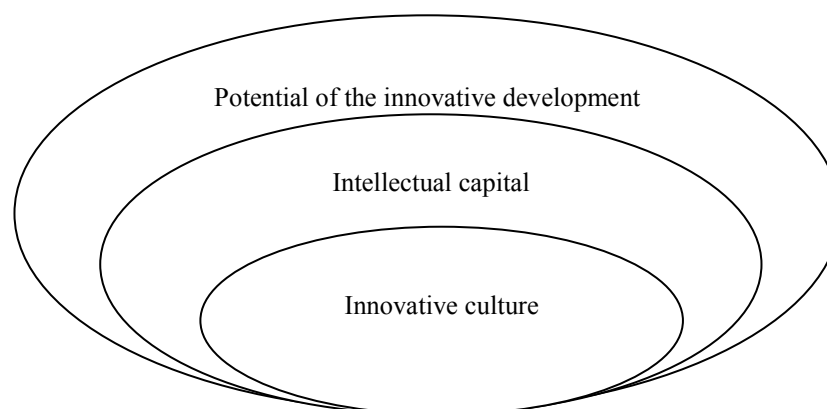


Figure 1.5 – Scheme of the relationship between innovative culture, intellectual capital, and innovative development [Author’s adaptation based on 1; 10]

Innovative culture among staff at enterprises and institutions is closely linked with other forms of their culture (managerial, corporate, entrepreneurial, etc.) and essentially influence on them. It provides the opportunity to form supportive and effective culture of staff professional activity at enterprises and organizations, establish productive relationships that will ensure the effective development of the state through innovations. Innovation culture shows the human value orientation on innovation, enshrined in the motives, knowledge, skills and habits, as well as samples and standards of behavior.

Innovative culture formation is inextricably linked with the creation of favorable conditions to development human creative potential. Formation of positive moral and ethical foundations that are perceived by the majority of society are among the main preconditions. The world experience proves that the higher moral and ethical foundations of society, as well as staff groups at enterprises and institutions, the more tolerant they will be to treat the development of individual capabilities of each person, and the higher the socio-economic parameters of the society and its individual members will be. This is particularly significant for the transition to sustainable development, whereas moral motives, with the undoubted importance of rational (economic), determines the strategy and tactics of sustainable innovative development of economy in Ukraine and its separate regions.

The obtained results develop theoretical-methodological bases of environmental innovations management in terms with clarifying the functions of ecologically oriented innovative culture of a society and the level of their implementation in modern conditions of socio-economic development in Ukraine. The authors highlighted specific instruments for implementation the functions of innovation culture in the society, and carried out the qualitative analysis to determine the level of their influence to stimulate transition the Ukrainian economy in an environmentally sustainable innovative development. Outlined the system of organizational-economic mechanisms that form environmentally oriented innovative culture of the society.

Thus, the formation of the ecologically oriented innovative culture is one of the most important prerequisites to activate the process of Ukrainian economy transfer to the sustainable ecologically balanced innovative development. And, therefore, it is to be one of the main state innovative and ecological policy priorities.

The further investigations must be directed towards foreign experience analysis, to create and introduce social and cultural mechanisms of ecologization regulation of innovative activities and to develop the state program of ecologically oriented innovative culture formation in Ukraine.

1. Balabanov V. O. To the problem of the society innovative culture formation / V. O. Balabanov // XXI century: Alternative models of the society development. The third world theory: Materials of the Third international scientific and technical conference, May 21-22, 2004. – Part 1. / Ed. G. P. Balabanov. – K : Fenix, 2004. – P. 388 - 391.
2. Bondar-Pidgurska O. Innovative culture as the necessary condition of the social and economic system sustainable development / O. Bondar-Pidgurska, Y. Korotych // Book of abstracts from International students' forum "A model of Visegrad countries in the youth integration into the only scientific and cultural expanse". – Lutsk : BIEM, 2012. – P. 124-127.
3. Zaharchyshyn G. M. Conceptual model of the enterprise innovative culture / G. M. Zaharchyn, O. Ya. Andriychuck // NFEU bulletin : Collection of scientific papers – Lviv : NFEU Ukraine. – 2008. – issue 18.8. – P. 272-278.
4. Zubenko W. W. Innovative culture in the enterprise organizing culture system / W. W. Zubenko // Economics and management. – 2007. – No. 4-5. – P. 93-97.
5. Illyashenko S. M. Investigations of the Sumy inhabitants' attitude to nowadays environmental problems / S. M. Illyashenko, N. M. Gaytyna, T. W. Kyrychenko, M. W. Rybalka // Marketing and management of innovations. – 2012. – No. 2. – P. 240-246.
6. Illyashenko S. M. Environmental compatibility as a factor of the production competitiveness / S. M. Illyashenko // Urgent economic problems. – 2012. – No. 9 (135). – P. 143-150.
7. Illyashenko S. M. Marketing analysis of the environmental characteristics of production on and consumption by native consumers / S. M. Illyashenko, Ya .A. Kovalenko, O. Ye. Timoshova // Collection of scientific papers of Khmelnytsky Cooperative Trade-Economic institute. – 2012. - No. 3. – P. 357-364.
8. Illyashenko S. M. Marketing grounds for introduction of environmental innovations monograph / S. M. Illyashenko; Sumy State University. – Sumy : LLC "Publishing house "Papyrus", 2013. – 184 p.
9. Illyashenko S., Prokopenko O. Ecological marketing // Marketing in Ukraine. – 2003. – No. 12. – P. 56-61.
10. Cameron K. S. Diagnosting and changing of the organization culture / K. S. Kameron, R. Quinn : Transl. from Eng. / Ed. I. A. Andreyeva. – SP: 2001. – 320 p.
11. Karpinskaya Yu. Ecological investigations «ECO Omnibus» from IDS Group/ Yuliya Karpinskaya // Marketing research in Ukraine, 2011. – No. 1. – P. 50-56.
12. Meffert Heribert, Kircheorg Manfred. Green marketing // Marketing / Ed. by M. Beiker. - SP, 2002. – P. 967-991.
13. Nickolaev A. I. Innovative culture as a culture of changes (problems, tasks, defenitions, suggestions) / A. I. Nickolayev, B. K. Lisin // Innovations. – 2002. – No. 2, 3.
14. Patora L. Innovative culture formation as the ground for enterprise innovative development potential / L. Patora, N. Tsymbalist // Problems of economics and management : NU “Lviv Polytechnic” bulletin. – 2008. – No. 628. – P. 603-608.
15. Prymak T. O. Eco marketing: the world and Ukrainian realities / T. O. Prymak // Problems and perspectives of the innovative development market-oriented management; Ed. Doctor of Economics, Prof. S. M. Illyashenko. – Sumy: LLC "PH "Papyrus", 2011. – P. 564-589.
16. Shane E. Organizational culture and leadership / E. Shane. Issue 3: Transl. from Ukrainian / Ed. T. Ju. Kovaleva. – SP: 2007. – 336 p.
17. Shypulina Ju. S. Innovative culture of organization: essence, structure, approaches to the evaluation // Marketing and management of innovations. – 2010. – № 2. – P. 132.
18. Shypulina Ju. S. Mechanisms of innovative and favourable environment formation at the industry enterprise / Ju.S. Shypulina // Innovative economy, 2013.– 8 (46).– P. 77-83.