

Creative Economy: Search for Universally Sustainable Development Possibilities in the Context of Lithuanian Creative and Cultural Industries

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ABSTRACT--- *The present paper represents an attempt to systematise the emerging concept of universally sustainable development and expand the area for the application of the category. The authors of the present paper are proposing a qualitative measurement component of sustainability exploring the reliability of the possibility for change of the condition, process or system. Simultaneously to the analysis of conversion the authors, referring to the sustainable development solutions offered, seek to explore and to evaluate the capacities of Lithuanian creative and cultural industries to develop their dynamics and interaction, and thus strengthen the potential of the national creative and cultural industries, and at the same time of the entire national economy. For the purpose of the present research paper the authors carried out an analysis of the capacities of creative and cultural industries to utilise investment and other development resources in view of the ongoing attempts to introduce in the national industry a number of currently specifically efficient instruments, such as strategic approach towards knowledge and social capital and intellectual property powers, regional development and value added creation, communicational universality, etc. The prospects of creative and cultural industries are treated as stochastic developments or processes, therefore the examination of such prospects required the utilisation of stochastically informative expertise and a reference to the necessity and the possibilities of stochastic optimisation. The purpose of the present Article is to define the concept of the universal sustainable development, and analyse the values based on the emergence of the new sustainability paradigm through the cultural integration. The present article also presents a survey of the core of Lithuanian creative economy – creative and cultural industries, and offers to introduce a quality measure that would ensure a systemic character of measurement of reliability (guarantee) of possibilities.*

Keywords — creative economy, creative and cultural industries, universal sustainability, stochastic optimization, expertise assessment.

1. INTRODUCTION

The European Competitiveness Report, published annually, and the Communication “An Integrated Industrial Policy in the Globalisation Era” claims that the development of creative and cultural industries is the basis for the economic growth of European Union. For Europe to retain the position of the economic leader industry needs to take a properly significant place in the development of the European Union economy. The Europe 2020 strategic guidelines provide that the objectives of development are to boost economic growth and creation of new jobs while maintaining and supporting a strong, diversified and competitive industrial basis, while offering to Europe well-remunerated jobs and reducing environmental pollution, while creative and cultural industries are referred to as an important factor of economic and social innovations in other sectors.

The European Commission indicated that in 2010 creative economy sectors (i.e., creative and cultural industries) in Europe employed 6.5 million people, and their economic growth by 12.3% exceeded the growth of other sectors; the regions best consolidating the creative potential are recognised those in Member States, Lithuania is mentioned among countries providing most jobs in the area – 5.79%, and by its employability ratio second to Austria only (6.2%). In 2010-2011, the best performing in the area were the USA (creative industries accounting for 11% of GDP), Australia (10.2%),

South Korea (9%), the UK (6.2%).

In 2010, the culture and creative sector created 4.5% of Europe's GDP, and 3.8% of all jobs in the continent. Also the report indicated that creative and cultural industry sectors in France generated 4.9% of GDP, 4.2% in Germany, 3.8% in Italy and 3.6% in Spain (Building a Digital Economy... 2010). As the Lithuanian GDP growth exceeded the forecasts, highly likely that the share of creative and cultural industries within the GDP also exceeded the estimated ratio. In most market-based economies the share of creative and cultural industries account for 2-5% of GDP, and is characterised by a sustainable phased growth exceeding the global economic growth average (Feasibility study... 2011).

According to the data of the Statistics Lithuania (Department of Statistics 2014) in 2011, 12,904 companies operated in the creative cultural sector employing total 42,394 persons (46 types of economic activities according to the national version (EVRK) of the Statistical Classification of Economic Activities in the European Community (NACE). That accounted for 8.6% of all companies operating in Lithuania employing 4.76% of the entire total national workforce. The new field of creative and cultural industries (heritage and art group) recorded by 1.32 times more companies (7,346) than the traditional field (5,558) (media and functional works group). However, the number of persons employed in the new creative and cultural industries (36,320) exceeded that in the traditional fields (6,074) by 5.97 times. The turnover of companies engaged in cultural and creative industries (EUR 1.206 billion) exceeded that of the companies operating in the traditional sectors by 8.48 times, the latter reported at EUR 0.142 billion. The growth of companies in the creative industry sector in 2006-2011 reached 38%, and the number of employees in the sector grew by 5.54%. The turnover of companies in the creative and cultural industries in 2001 increased from EUR 0.551 billion to an excess of EUR 1158 billion in 2006, decreased in 2009 to EUR 1 billion, and subsequently was increasing to reach EUR 1.345 billion in 2011. Thus, the turnover in the course of ten years (2001-2011) increased by 2.45 times.

In view of the intensifying globalisation the concept of a national sector and national industries is somewhat disappearing. Europe is seeking to create a holistic strategic approach to the creation of European value chain ranging from the infrastructure and raw materials to servicing after the sale or the provision of a service. For promotion and fostering the creation and growth of small and medium-sized enterprises it is specifically the creative and cultural industries companies that become vital for the formation of the EU industrial policy. The transition towards the sustainable economy is an opportunity to strengthen the competitiveness of creative and cultural industries by introducing (Rutkauskas, 2000) which would also determine the systemic approach towards the measurement of the reliability of possibilities (guarantee).

2. ASSUMPTIONS OF THE SUSTAINABLE DEVELOPMENT FOR DEFINING THE CONDITION OF THE CREATIVE ECONOMY

The publication of the “Post-2015 Agenda” in 2013 introduced some essential changes in the theoretical concept of sustainability and its practical application. The sustainable development acquired an officially designated category of universality based on integration mechanisms and ensuring a holistic approach towards addressing the social issues of a society. According to a conventional approach pursued in the eighties of the 20th century the sustainable development (or sometime referred to as balanced development) is based on such a concept of economic development that embraces an entirety of methods ensuring the access to all resources for the generations to come. The historic roots of the term “sustainable development” originate from a German term to be found in the professional terminology of forestry – the sustainable yield (Germ. *Nachhaltiger Ertrag*) which was first recorded in written sources back in 1713 (Grober 2007). The sustainability concept is believed to have originated from the area of forestry when cutting a forest involves identification of the trees to be cut, as well as reforestation volumes to preserve the forest for the future generations (Ehnert 2009). The basis of the sustainable development is not only the preservation of physical capital resources for the future; the concept also presupposes a method of thinking, an ideological capital that ensures a sustainable development of the future. The issue of sustainability was relevant back in the ancient times, and the aspect was already discussed by Aristotle who claimed that household management must be regenerative, rather than wasteful (Ehnert 2009). In the modern age the sustainability is believed to have been mentioned for the first time by a group of researchers working at the *Massachusetts Institute of Technology*. While speaking about the efforts to maintain economic equilibrium, the researchers of the Institute noted that by their research efforts they attempt to develop a model reflecting the global system in a way that: 1) sustainability develops without a sudden and uncontrollable decline; 2) sustainability facilitates retaining the necessary material requirements for its people (Grober 2007, Spangenberg 2001).

The perception of sustainability as used by the authors as an concept of efficiency and reliability fully matches with the concepts of status and the sustainability of development as mentioned earlier, and requires a regular assessment of reliability of opportunities in the past and the future.

In 1987, the United Nations World Commission on Environment and Development published its report “Our common future” that in English sources is also often referred to as the *Brundtland Report*. The basis of the report contains two main concepts: 1) the concept of “needs”, in particular the essential needs of the world’s poor, to which overriding priority should be given; and 2) the idea of limitations imposed by the state of technology and social organization on the

environment's ability to meet present and future needs. The United Nations Organisation builds the sustainable development on three core elements: the sustainable development as sustained economic growth, social development and environmental protection. On the basis of those three elements new sustainability standards were designed in different sectors of industry. UNESCO (2001) designated the sustainability concept not only as economic growth, but also as a pursuit for an adequate intellectual, emotional, moral and spiritual existence. In this respect cultural diversity is the fourth element of sustainable development, and embodies the concept of **universally sustainable development**.

When speaking of creative economy, and creative and cultural industries, it is quite useful to consider the etymology of the word “culture”. The Latin word “cultura” is a polysemantic word. It may mean cultivation, education, training, teaching, perfection, development, worshipping and may have many other meanings. The word “culture” is used both as a designation of an activity, and as an understanding of the level of science.

The concept of creation both with respect to science and the activity is directly related to the concept and the utilisation of knowledge, innovations and technologies. However, any creative activities always targets attaining a certain level of culture. This enables realising a specific divide and the interface between the creative economy, and the creative and cultural industries, and the correlation between the pragmatic economy and industries.

A methodically impeccable utilisation of such correlations is in all cases an expedient exercise, as the adequacy of the modern analysis and solutions is thus tested in pragmatic situations, and it is only then that the methods are adapted in creative and cultural industries.

The universality of the transition concept deserves attention when also considering the universal sustainability concept. The universal concept *per se* is developing in two aspects. First, in numerous global documents and the accompanying substantiations the universality manifests itself through the construction of analogous categories to ensure that sustainability is identically understood by all entities – regions, nations, business, etc. The second dimension targets a feasibly widest cycle of entities both concerned with sustainable development and responsible for its realisation. This dimension also includes an integration of cultural component to the social, ecological and economic components. However, the frequently occurring experiment and its designation as an ultimate feasible component may be excessively ambitious.

In the “Post-2015 Agenda” (Towards a Framework...), the universal sustainability objectives is one of the four components promoting international cooperation and the holistic approach towards the sustainability status. An integrated system of Universal Sustainability Goals could comprise the following six goal dimensions: 1) dignity and human rights for all; 2) equity, equality and justice; 3) respect for nature and planetary boundaries; 4) peace through disarmament, demilitarization and non-violent dispute settlement; 5) fair economic and financial systems; 6) democratic and participatory decision-making structures. These six dimensions must not be regarded in isolation from one another, although each being independent and significant in its own way, the universal sustainable development arises specifically from their interaction.

The values of sustainable development are specified in the Earth Charter in which sustainability is presented and integrated vision of the future. As declared in “Agenda 21” Sustainable Development Action Programme (2001), the United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 3-14 June 1992) known as the World's top level summit attended by 178 governments, passed the “Agenda 21” – the Global Sustainable Development Action programme. The Governments are implementing the mandate approved at the United Nation General Assembly (1989), at the world-level summit convened to define the common strategies to prevent the negative impact of human activities upon the physical status of the environment and promote environmentally-sustainable economic development in all countries. “Agenda 21” is a global action plan – from now for governments of the 21st century, United Nations organisations, development agencies, non-governmental organisations and the independent groups in all areas in which human activities make an impact upon the environment. In the Section on economic sustainability “Agenda 21” specified three measures (information, integration and participation) facilitating the countries in attaining their defined goals. The document noted that in sustainable development, everyone is a user and provider of information considered in the broad sense, also emphasises the need for the conventional centre-driven sectors to refer to the intersectoral coordination principles and integrate into the social environment of the development. The “Agenda 21” also emphasises the importance of a wide participation of people in the decision-making process in order to achieve sustainable development.

Related to the universal sustainable development are the theories on “strong sustainability”, “weak sustainability”, deep ecology and “just sustainability”. The latter refers to the social aspect of sustainability only in relation to environmental protection (Ageyeman, 2005). It is “the egalitarian conception of sustainable development” (Jacobs, 1999) Other authors have claimed that the “just” sustainability refers to ensuring a better life now and in the future, whilst living within the limits of the available resources and recognising the limits of the ecosystem (Agyeman *et al.*, 2003) This concept of the universal sustainable development focuses equally on three conditions: improving the quality of life and well-being of present and future generations; recognition of justice and equity (Schlosberg, 2013); and the ecosystem of processes, procedures and outcomes (Agyeman, 2005). The open access technologies offer the most direct path to reach the “just” sustainability. Still, the “green development” is distinguished from the sustainable growth which encompasses economic, social and cultural issues. As claimed by the researchers of sustainability Donohoe & Needham (2006) is the ability to manage today's resources whilst conserving them for future generations. At the same time the author speaks

about the responsibility of the current generation for seeking to improve the life of future generations by restoring the damage to the ecosystem already incurred and by resisting any future damage to it.

An element of sustainable development – culture – defines the complexity of the modern society. In this context “Agenda 21” (Culture: Fourth Pillar of Sustainable Development, 17-11-2010) elaborates on the new approach towards the relation between culture and sustainable development through dual means: firstly, the development of the universal culture policy; and secondly, ensuring that culture has its rightful place in all public policies. “The Network of Excellence” supported by the European Union elaborated on its targets in the document “Sustainable Development in a Diverse World” in which it integrates multi-disciplinary disciplines and refers to cultural diversity as “one of the roots” of development. The sustainability cyclicity theory defines the culture area as practices, discourses and material expressions which in the course of time express the continuity of the meaning. Still, as the fourth pillar of sustainable development culture has not yet been recognised on a universal scale.

According to Lubbers & Morales (201), the sustainability concept may be used alternatively for constructing the further development trajectory of the increasingly globalising society. As thinking paradigm sustainability is characterised by durability, a holistic and an integrated approach (Nieto & Neotropica 1997; Klingmann 2010). According to Lubbers & Morales, this durability is determined by a persistent strive to build intergenerational equality. The holistic approach is fostered by placing a special focus upon ecological, social issues and security in all circles of the society – from local to the global. Where sustainable development is understood as a starting points for actions, it gives rise to alternative objectives and targets.

The sustainable development concept has been frequently challenged for being overly abstract, as it is difficult to substantiate the needs of future generations, measure their abilities to meet such needs; and eventually, there is a question what needs to be considered a need. This would be an appropriate time to consider the introduction of a quality measure that would ensure a systemic character of reliability of possibilities (guarantee). Furthermore, it has been already proven that sustainable development is a stimulating concept. Sustainable development stimulates individuals and organisations to think in longer-term perspectives, assume a holistic and integrated approach, mind the capacity of the environment, also duly consider the existing limitations, as well as modify their behaviour modes to more environmentally-friendly.

In the context of universal sustainability the culture dimension or the cultural sustainability concept to a considerably larger extent focuses upon cultural and creative diversity and thus acquires an alternative paradigm. A society is not viable unless it has capacities to manage such diversity. Without such fruitful interrelation the homogeneous cultures are much poorer. The objective of culture and creation is openness to globalisation, however, at the same time ability to protect itself from a homogeneous influence able to distort the identity.

3. CRITERIA OF THE CREATIVE ECONOMY SUSTAINABLE DEVELOPMENT FOR THE ASSESSMENT OF CREATIVE INDUSTRIES

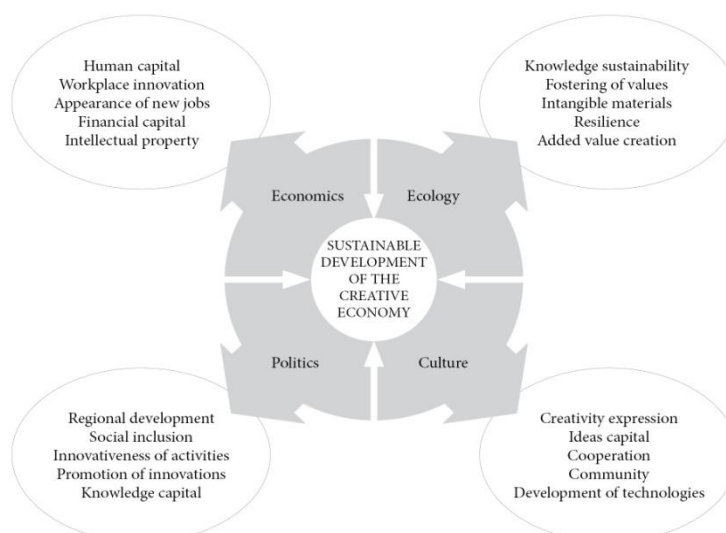


Fig. 1 20 criteria for sustainable development of creative economy on the basis of the four pillars of sustainable development (compiled by the authors)

The authors of the survey were referring to “Agenda 21” (2002, 2012) adopted at the United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 3-14 June 1992), as well as the updated approach to the key pillars of sustainable development – economy, ecology, politics and culture – all shaped by the post-modern approach towards the universal sustainability established by “Post-2015 Agenda” (Towards a Framework...). For the purpose of constructing a theoretical model of sustainable development of creative economy the authors of the present research paper distinguished in the research literature 20 criteria of sustainable development of creative economy (those were defined on the basis of the four pillars of sustainable development – economics, ecology, politics and culture (Fig. 1).

Creativity expression (Runco 2010; Beghetto& Kaufman 2007) should be interpreted in the context of creative economy as a tool facilitating specifying abstractions (ideas) and promoting the appearance of new creative products and services. Most frequently the expression of creativity is actually a direct ability of a creator to disclose his creative work to the market. The expression of creativity is a cultural dimension closely related to the capital of ideas. Capital of ideas (Howkins 2001; Bernstein 2005) – is an intangible asset that, in view of the cooperation of creative product and creative service markets (Garmann Johnsen & Ennals 2012; Uricchio 2004) create a high added value (Arndt *et al.* 2012; Hearn *et al.* 2007) in the ecological dimension. The technologies developed on cultural basis (Potts *et al.* 2008; Caves 2002; Deuze 2007) promote new social structures that are reflected through the relations of the new communities (clusters, incubators, parks) (Parmentier & Mangematin 2014). In the political dimension regional development (Jayne 2005; Hall 2000) represents the strive of the States to ensure infrastructures important for communities and the related standards of social-economic environment, living standards quality giving rise to social inclusion (Stryker *et al.* 2000; Kumar 2002) in view of the emerging new social structures. The appearance of such new social structures is determined by the innovativeness of activities (Berardo & Deardorff 2012; Frankea & Shah 2003), promotion of innovations (Garmann Johnsen & Ennals 2012) and the knowledge capital (WKCI 2014; Graham 2002; Löf 2002; Garmann Johnsen & Ennals 2012) also referred to as intellectual capital. The economic dimension is inseparable from human capital; in other words, from human resources (Davidsson & Honig 2003; Dunn & Holtz-Eakin 2000) that accumulate competences, knowledge, social and individual attributes thus creating economic value. The importance of intellectual property (Howkins 2001; Bilton 2007; Vaidhyathan 2003) builds up a basis for the creation of workplace innovation (Totterdill & Ennals 2014; Black & Lynch 2004), appearance of new jobs (Dunn & Holtz-Eakin 2000), strengthening of financial capital (Dunn & Holtz-Eakin 2000; WKCI 2014). The ecology dimension integrates fostering of values (Moeran & Pedersen 2011; Yu *et al.* 2004), usage of intangible raw materials (Santagata 2004; Australian Copyright Council 2008), and hence arising resilience (Dong & Haruna 2012) and sustainability of knowledge (WEF 2014; WKCI 2014; Garmann Johnsen & Ennals 2012) that is related to life-long learning, digitalisation and telematisation.

The distinguished criteria are actually the areas the focus placed on which (actually, investment) produces an impact upon creative and cultural industries which in the case being investigated represent the core of creative economy. Thus the objective of an empiric survey is to project an allocation of focus (investment) into the development of factors to maximize their effect upon the existence of creative economy.

4. EMPIRIC SURVEY – UNIVERSALLY SUSTAINABLE DEVELOPMENT SOLUTIONS IN CREATIVE AND CULTURAL INDUSTRIES

The present section of the paper is dedicated to solving a sustainability problem related to creative industries on the basis of the theoretic analysis of the creative economy development. The methodology of the survey of creative economy requires specific coherence of the survey methods for the following reasons: 1) absence of integrated economy research of the phenomenon of creative economy; 2) the still not identified qualitative dialogue for addressing the problem of creative economy; 3) the multi-faceted nature of the elements of creative economy. The defined objective of the empiric survey is to identify the most appropriate allocation of sustainability actions influencing the evolution of individual industries so that the effect of their overall existence is maximised. The method applied for the purpose of the present research exercise is a survey of experts based on *Delphi* structured communications technique, the composition of an investment portfolio according to an adequate portfolio method.

4.1 Construction of criteria sustainable development of the creative economy for the assessment of creative industries

The first stage of the empiric survey is based on the principles of group expertise. Thus the group expertise was employed as a survey method with a view to assessing and generalising the sustainable criteria of creative economy as defined in research works and papers. This expert evaluation method is based on *Delphi* structured communication technique and logic procedures, while the quantitative expression of the results ensures a priority sequence of the expert opinion for the assessment of creative industries. As a preparatory measures for the expertise the following tasks were defined: 1) to define the objective of the expert examination; 2) assess the advantages and disadvantages of a selected technique; 3) draw up a plan for expert procedures; 4) conduct the selection of experts and set up the group of experts; 5) carry out the survey; 6) process the results; 7) draw up the conclusions of the expert examination. **The objective of the**

expert examination was to carry out an expert evaluation of the criteria underlying the evaluation of investment into creative industry sectors. Having assessed the advantages and disadvantages of the methods for the first stage of the empiric survey – defining of criteria of sustainable development of creative economy for the evaluation of creative industries – the authors of the paper selected the *Delphi* method and draw up a plan for procedures (Fig. 2).



Fig. 2 Expert examination procedure plan (compiled by the authors)

The selection of experts was conducted in two stages of the group survey: the group of the first stage was composed of experts who have accumulated in the areas of economics, ecology, politics, culture and some representatives of non-creative industries (professionals) horizontally evaluating the creative economy issues in Lithuania. Upon the completion of the first stage the following 8 criteria of sustainable development of creative economy were selected and used for the second stage (Table 1):

Table 18 criteria of sustainable development of creative economy and their description (compiled by the authors)

No. No.	Criteria	Criterion description
1	Knowledge capital	Otherwise referred to as intellectual capital designating the utilisation of experience, information, knowledge, learning and skills for expert and ability-based economic thinking. Knowledge capital is the principal component of human resources (Stewart & Ruckdeschel 1998).
2	Social capital	Social capital is an instantiated informal norm that promotes co-operation between individuals (Fukuyama 2001). An element of economic progress, enhancement of productivity covering such categories as lifestyle and quality that presuppose work style, a method of management and organisation, priorities of economic activity (Augustinaitis 2004).
3	Regional development	The horizontal priority of the country defining and establishing the obligations of the State to ensure for its citizens the appropriate standards of social-economic environment, quality of life irrespective of the place of residence and embraces the themes of the basic infrastructure relevant for local communities, quality of the environment, the quality and the accessibility of public services, quality management and development of sense of community (EP 2014).
4	Resilience	The ability to restore the line of actions after some changes or stresses, or the ability to change the direction of action. Resilience (Merriam Webster 2014).
5	Financial capital	The entirety of capital goods intended to be acquired (or acquired) in monetary terms (Vainienė, 2008), financial assets (Rutkauskas 2008).
6	Intellectual property	An intangible product of creative activity (Vainienė 2008). Objects of intellectual property are not material. The result of intellectual creative activity is in all cases related to the personality of the creator, the interrelation is determined by the basis of the intellectual creative activity – the creator's thoughts, ideas, and creators of objects of intellectual property have dual interests with respect to the objects – both material and immaterial (spiritual) (Stonkienė <i>et al.</i> 2009.).
7	Creation of added value	The increase in the value of products and services in each stage of the production process (Vainienė 2008), the value of a product or services created in the process of production, processing and marketing actions (Merriam Webster 2014).
8	Communication	A communication approach expresses the increasing dominance of information space in the modern world, when information, knowledge or creation as the ideal attributes of the public existence acquire a prevailing economic significance in the new communication structures (Augustinaitis 2010).

The expert group of the second stage is made up of two groups of experts – 14 experts from the first stage, and 10 additional experts representing sectors of the Lithuanian creative industries. Total the expert group of the second stage was composed of 20 experts. Each expert assigned to each creative industry non-recurrent scores from 1 to 10 according to each of the 8 criteria. The overall score assigned by the experts, and the ranking of all creative and cultural industries according to all criteria are provided in Table 2. The highest score is represented by 10 points, and the lowest – by 1 point.

Table 2 Expert evaluation of creative industries according to 8 criteria (10 – best score, 1 – the last score) (compiled by the authors)

Criteria	Creative and cultural industries									
	Locations of cultural values	Crafts	Expression of traditional culture	Visual arts	Scenic arts	Publishing	Audio-visual arts	New media	Creative services	Design
Knowledge capital	4	1	3	2	6	5	7	9	10	8
Social capital	2	1	6	5	4	3	9	7	10	8
Regional development	10	7	9	4-5	8	3	2	1	6	4-5
Resilience	2	1	3	4	5	7	6	8	10	9
Financial capital	6	1	2	3	4	5	10	9	7	8
Intellectual property	3	1	2	6	4	5	9	7	8	10
Creation of added value	2	1	3	5	4	6	8	7	10	9
Communication	3	1	2	4	5	6	9	7	8	10
Total score	3	1	2	4	5-6	5-6	8	7	10	9

The conclusions of the expert examination carried according to the *Delphi* method are the following: Experts assign priorities upon the new creative industries: 10–7 points were assigned to creative services, design, audiovisual works and the new media. Upon a consensus evaluation of the experts lower scores were assigned to traditional creative industries: 1–4 points were assigned to crafts, traditional cultural expression, locations of cultural values and visual arts. Averagely scored (5–6) were scenic arts and publishing. A conclusion may be drawn up that the new creative activities are replacing the traditional cultural activities.

5. CONSTRUCTION OF THE ADEQUATE INVESTMENT PORTFOLIO FOR ENSURING THE SUSTAINABLE DEVELOPMENT OF THE LITHUANIAN CREATIVE ECONOMY

The model of the previously referred to systemic approach and the systemic analysis and designed for ensuring optimal allocation of investment resources (Rutkauskas, Stankevičienė 2003) among the different industries with a view to ensuring the most efficient utilisation of the investment, is a task of exceptional importance both for the sustainability of creative economy, and the construction of the universally sustainable development strategy. According to Rutkauskas & Stasytė (2011), in many cases a provision about preservation of quantitatively measured guaranty for certain economic, demographic and financial proportions can become a fundamental framework for fostering sustainable development.

In view of the absence of the quantitative dependence of the model, or even a sufficient statistical database, for the purpose of ensuring the sustainability of creative and cultural industries, as well as the entire national economy the expert evaluations on the structuring of the creative economy development must be referred to.

In the opinion of the authors, the obtained results of the expert evaluation may be directly used for projecting the universally sustainable development of creative and cultural industries. According to the extended option of expert evaluation as per Table 2, 160 estimates obtained with respect to each creative and cultural industry (8 criteria x 20 experts) that were treated as random observations. With reference to the estimates and using the adequate investment portfolio methodology (Rutkauskas, 2006), an allocation of an optimal marginal investment unit between the solutions of the different industries was obtained. The conclusions were derived based on the views of the experts that a point refers to an evaluation of the ability of industry to efficiently use a resource designed for development for attaining a specific target. The results of the solution are presented in Fig. 3, where Section A shows the efficiency surface, Section B – the adequate three-dimensional utility function, Section C – geometrical point of tangency, Section D – the specification of the proportional allocation of the investment unit among the industries.

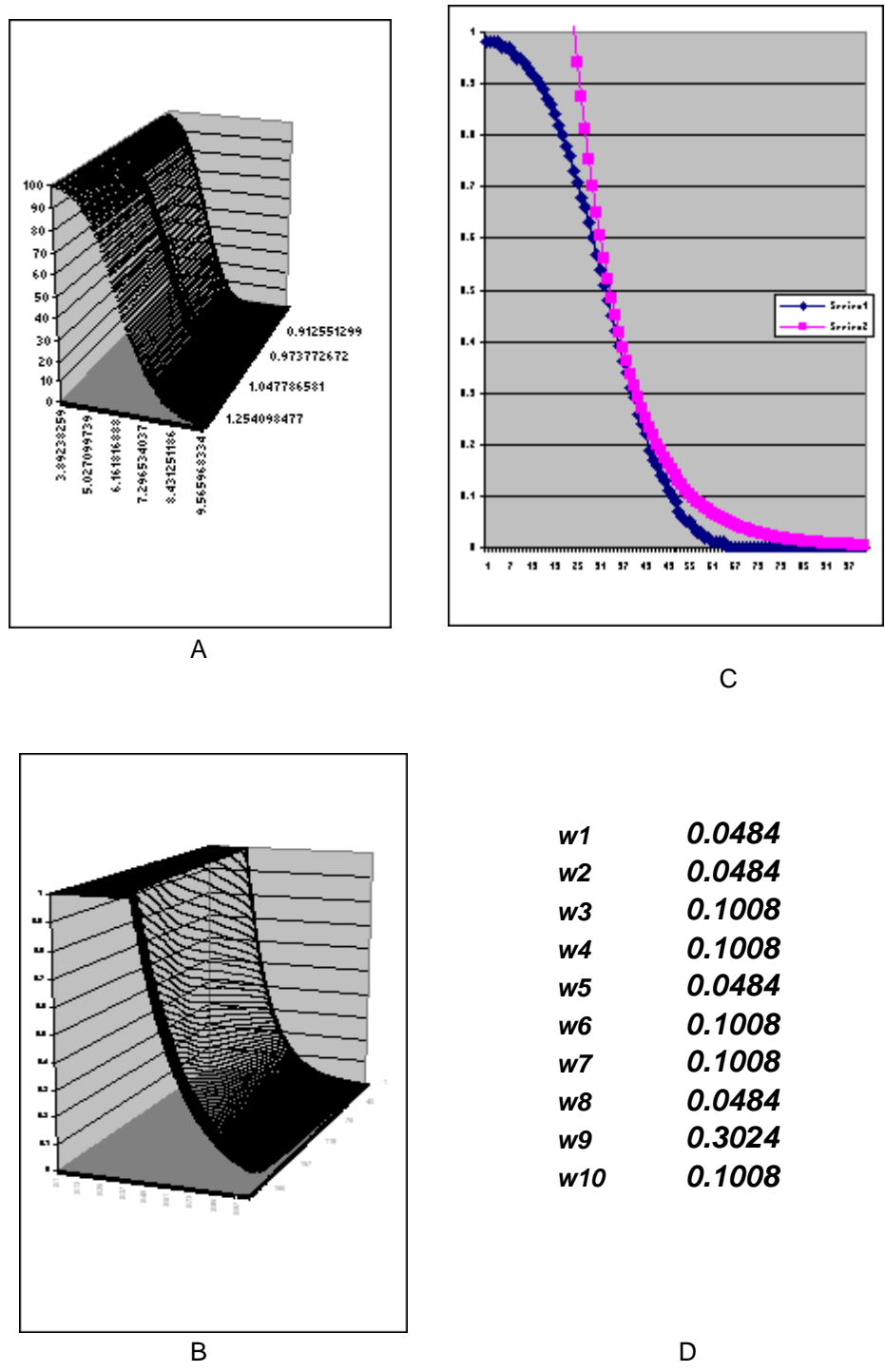


Fig. 3 Solution results using the adequate investment portfolio methodology (compiled by the authors)

The expert evaluation in a 10-point scale (10, 9, 8, 7, 6, 5, 4, 3, 2, 1) is worth a separate discussion, as it contains some secrets, and possibly, even misunderstandings. First, a non-dimensional score, i.e., a score which is not specified for what it is assigned, does not have a meaning. Thus prior to understanding the meaning of an assigned score, it is necessary to specifically design what the scores are assigned for. In the case concerned the experts were assigning the scores to assess the abilities of an industry to use the resources allocated to it in a way that the allocated investment unit would produce a maximum effect. A higher score assigned to a specific industry means that the industry is using the investment unit efficiently, thus making a positive contribution to the product of the creative and cultural industry. Provided the score scale is adequately oriented towards the structure of the changes of the abilities according to the criterion being evaluated, then the inaccuracies directly used for solving the problem raised by the ranking system may be minimised. Where the structure of the expert scale is transformed linearly, e.g, the possible values are multiplied by a certain number, and then it is also theoretically understood that the linear transformations do not affect the values of the

expert estimates. However, what would happen to the expert estimates, if the same experts would use an entirely different expert scale structure. The present experiment used the same expert estimate Table as described earlier in the evaluation, and the natural logarithm was used instead of the score values in positive integers.

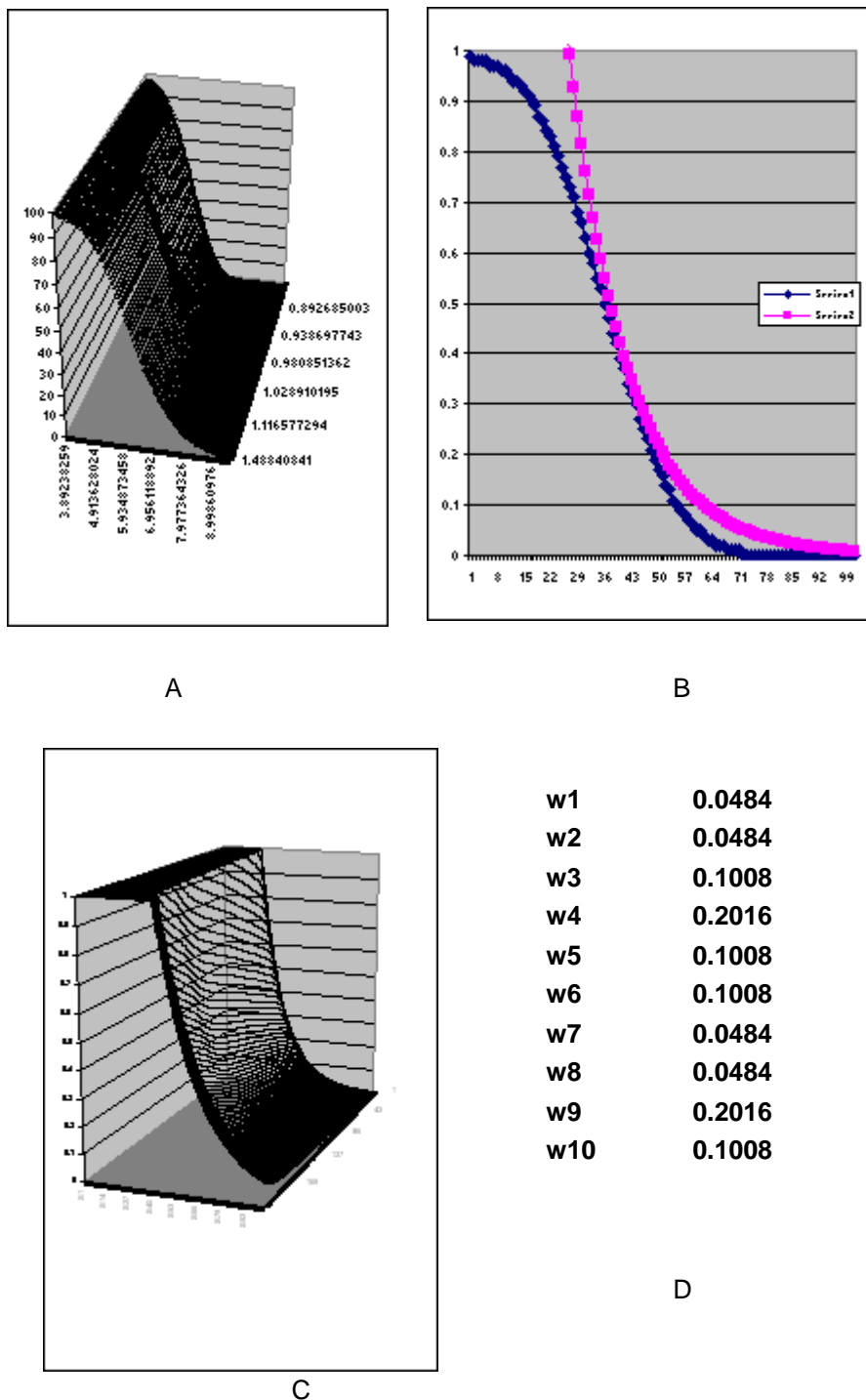


Fig. 4 Results of the optimisation solution according to new estimates (compiled by the authors)

Fig. 4 presents the results of an optimisation solution when the parameters of a stochastic optimisation problem were evaluated according to the estimates in the new scale. The most meaningful comparison of the results presented in Fig. 3 and Fig. 4 would be obtained according to the allocation of resources among the different industries as evident in Section D. This expressly shows that the same estimates obtained by the experts produce different results when transformed into

a different measurement scale. This may be acknowledged as a proof that the expert evaluation estimates are strongly dependent upon the evaluation scale.

6. CONCLUSIONS

1. The emergence and the formation of creative and cultural industries of Lithuania should be perceived as a transformation of a cluster of creative economy oriented towards the innovative national economy (whilst addressing both social, environmental, and economic growth issues, as well as the conceptualisation of culture).
2. A theoretically substantiated multi-criteria expediency of the cluster should become a basis for the efficient functional orientation of each element of the cluster, and - which is specifically important – a means for projecting a rational need for the use of investment and other limited resources. For that purpose not only an organisational structure as a union of comparable objects, but also a cluster of activities related by their functionality and the use of rational resources should come into being.
3. Fostering the methods as referred to in the previous item, clusterisation of creative and cultural industries would acquire attributes of an adaptive complex system with a possible further application to the system of theoretically substantiated and universally approved methods of analysis and management of development.
4. The regularities of the development of a cluster in creative and cultural industries organised in such a way could be treated as canons of the universally sustainable development, and as a system subjected to laws. An integrated cluster of knowledge, innovations and technologies would naturally develop into a system fostering the code for the development of the cluster.
5. The stage of the initial formation of a cluster in creative and cultural industries, both the emergence of the dependency system, and the formation of the guidelines for the strategic development is related to a high level of uncertainty. That is weighty argument supporting the idea that the stochastic optimisation methodology should serve for the ultimate disclosure of the existence of a cluster.

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