Hedonomic Roadscapes in the Context of Urban Sprawl

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ABSTRACT. **The paper represents the research of a road landscape from hedonomic point of view, which is a necessary and important part of landscape sustainability. The proposed research method consists of preparative inquiry of the roadscape using Kansei engineering and SD (semantic differential) technique, and the main inquiry using multiple linear regression analysis. The application of the method to the landscape of Lithuanian highways let us identify the factors which influence the hedonomics of a road landscape.**

KEYWORDS: **roads, hedonomic roadscape, urban sprawl, roads expansion, pleasurable, multiple regression.**

Urban sprawl is a complex socioeconomic phenomenon which is predominantly influenced by demographic and economic factors [1; 2]. The sprawl can be controlled, for instance, by making it a pleasurable experience for society. One of the ways of making the sprawl pleasurable is to form a hedonomic environment, where hedonomic roadscape, inter alia, plays a key role. Hedonomics is a rather new branch of science, which is closely related to ergonomics: where ergonomics research area ends, hedonomics just begins.

The term *hedonomics* takes its roots in Greek: while *hedon(e)* means pleasure and joy, *nomos* indicates resemblance to law [3]. Some scholars relate hedonomics to the feeling of happiness and delight [5; 6], and others – to pleasure [7]. According to P. A. Hancock [3], if we had a look at Maslow's pyramid of human needs, we could compare it to the hierarchy of ergonomics and hedonomics. Ergonomic needs, such as safety, functionality, and usability, would be at the bottom of the pyramid, and hedonomic needs, such as pleasurable experience and personal perfection, would be at the top of the pyramid. Further analysis of literature and comparison of facts about hedonomics let us perceive a hedonomic roadscape as a pleasurable roadscape.

The recent decade can be praised for the scholarly efflorescence in investigating pleasure felt by an individual and consequently upon the use of different technical and engineering objects. J. Djajadiningrat [8], S. Wensveen [9] and others have put forward proposals regarding design of a hedonomic object and stages of creating it; L. Murphy et al. [10] have performed a hedonomic evaluation of an interaction between a human being and a computer; H. M. Khalid [7] has developed a methodology of evaluating a design arousing a customer's addictive emotions, and P. Desmet [11] has analyzed possibilities of creating a mobile phone infusing its user with pleasure. However, the literature review did not reflect the methods applied to evaluation of hedonomic roadscape. Moreover, factors conditioning pleasurability, or hedonomics, of roadscape remain vague.

The paper aims at presenting the evaluation method which enables to indicate factors determining hedonomics of the roadscape, as well as to express the descriptive attribute *hedonomic* by a formula with numbered values.

I. THE RELATIONSHIP BETWEEN ROAD EXPANSION AND URBAN SPRAWL

At the junction of the 20th and 21st centuries, the development of roads reached a vast scale and seized not only urbanized territories but almost intact landscapes as well. The sprawled network of sideways, wide corridors encompassing four to ten lanes, as well as city and suburban roads and crossroads reaching several floors, are figuratively referred to as "spaghetti" [12]. They have attracted a plethora of specialists in land management and environmental engineering, landscape architects and planners, ecologists, economists, and sociologists. The expansion of the road network is determined by a number of factors: growth of population, relatively lower prices of land sites and realty in suburbs, the building of suburban blocks and districts, investments in roads, buildings, water-supply, telecommunications lines and other infrastructure in peripheral zones; retardation of the qualitative development and sponsorship of existing city centres; the wish of large business and industry companies to reach a comfortable highway quickly. Thus, the expansion of the roadscape is inevitably interrelated with the urban sprawl. Two interrelations of the expansion of cities and roads can be distinguished:

- the in-building of territories takes place along or nearby an existing road – in this case, the further urban sprawl of road conditions,
- new roads are built up to an existing object or to an unbuilt territory – in this case, expansion of the road network is determined by the location of the existing urban nodes.

In any case, expansion of roads can be treated both positively and negatively. The positive aspects of the expansion of the network of roads are the following: mobility of population, access to quick and comfortable communication; from an economic point of view, new roads enable development of business and rise of new settlements; an advantageously built road can raise up value of the nearby realty, as well as affect positively ecosystems and microclimate [13]. On the other side, the negative results of the expansion are the following: social ones – development of individual dependence on cars, low level of population density in peripheral zones, growing consumption of energy, dislocation of home and work places; ecological – pollution of biota and segmentation of its ranges, as well as air, water and soil pollution; urban – discursive expansion of cities, as often as not an in-building of new territories takes place along road routes [14]; aesthetic-visual – growing fragmentation [15; 16] of landscapes which is manifested by pulverization of their structures. Though the expansion of the network of roads, as well as the expansion of cities cannot be stopped, it can only be regulated.

The idea of sustainable development appeared at the end of the XX century, when large cities of developed countries faced

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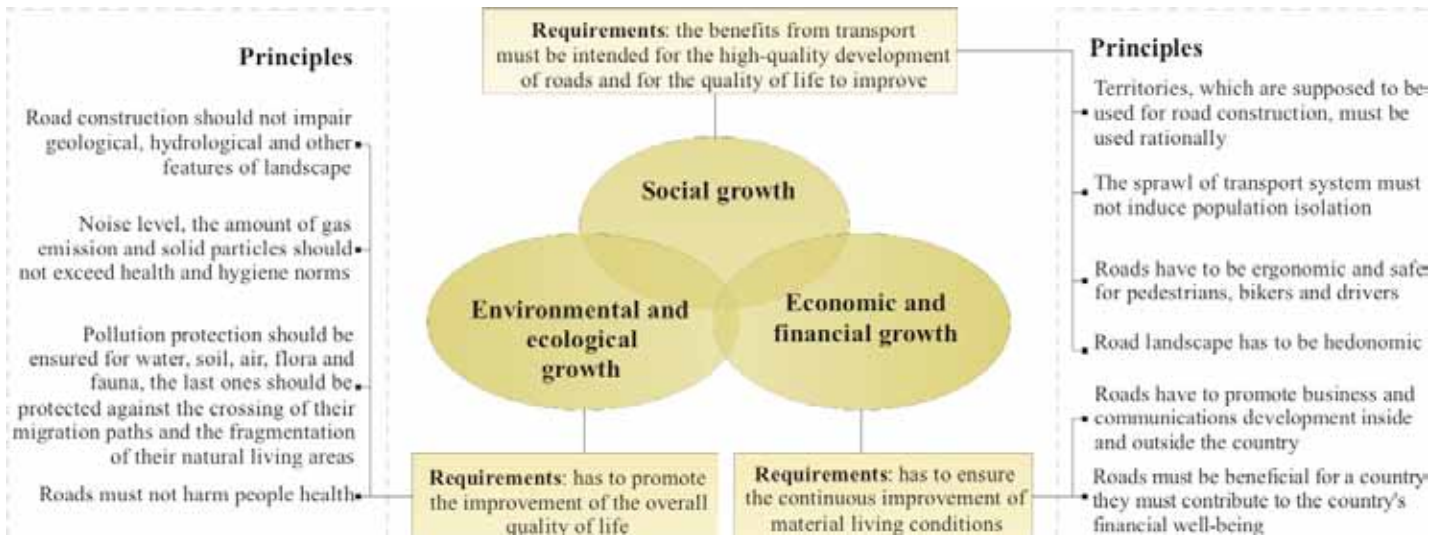Irina Matijošaitienė, Inga Stankevičė. Hedonomic Roadscapes in the Context of Urban Sprawl

Fig. 1. Formation principles of sustainable road system according to three requirements for sustainable growth (According to R. Robinson and B Thagesen [22; 23]).

ecological problems, their inhabitants' health problems, problems of territorial planning and city zoning, insufficient capacity of infrastructure, etc. In a broader sense, sustainable growth and development means meeting demands of nowadays generations without posing menace to future generations and limiting their activities and demands [17]. Many nation states need to solve problems of access to new districts which are incorporated into growing cities. As the tendencies of the growth of suburbs and unbridled expansion of cities prevail, sites isolated from each other are inbuilt rather loosely. Because of large distances between dwelling-houses, workplaces and leisure infrastructure, demand for transport is increasing, and, respectively, demand for new roads as well [18]. Without existence of roads between settled territories, people suffer from "social isolation". In order to develop networks of roads and highways, envisaged territories are required. Mightily high prices of sites and problems regarding acquisition of sites (especially historical and protected areas) enabled policy-makers reconsider problems of communication and formation of transport systems. In 1970, planners began encouraging formation of compact cities [19]. For example, in 1998 in Austin city, USA, implementation of programs, policies and action plans, aimed at defining how and where the city could expand, how to improve its quality of life, and how to reinforce the city taxation basis, began. According to Roger W. Caves, sustainable growth intends investments not into new territories, but into those ones with an already established infrastructure [20] – thus, development of transport corridors is fostered. M. Ferrari [21] supports the idea of sustainable development of roads by stating that urban development is possible only in areas with the established infrastructure because construction without a prepared basement would be notably uneconomical and would stimulate vague urban sprawl. Sustainable growth of transport corridors should be adjusted to the effective use of the state's territories, its economic growth, conservation of natural resources, foresight of different means of communication, improvement of the quality of life, as well as reduction of car pollution [22]. The following principles of regulating sustainable development of roads can be distinguished:

- territories envisaged for road building must be used rationally;
- development of transport corridors should not foster isolation of inhabitants;
- from the economic point of view, roads must force development of business and links, and they must be useful to a correspondent state;
- the building of roads should not worsen geological, hydrological, etc. conditions of the respective landscape;
- roads must be safe and comfortable to pedestrians, cyclists and car-drivers;
- level of noise emitted by cars, exhaust gas, particle matters should not exceed permissible sanitary-hygienic norms;
- when envisaging roads, protection of water, soil, air, and biota from pollution must be ensured;
- roads which are built nearby settlements should neither affect the inhabitants' health nor reduce the quality of their lives;
- roads must be planned in such a way which ensures that they do not affect territories of cultural heritage, physical and aesthetic-visual state of objects, as well as do not cover the territories and the objects;
- a pleasurable road landscape must be established, and while doing that, the issues of architectural formation and aesthetics must be dealt with.

In the attempt to implement the latter principle, one faces the formation of hedonomic roadscape. The formation of hedonomic roadscape has to be implemented as a part of sustainable growth (Fig. 1). In order to ascertain how hedonomics of a roadscape could be measured, we propose an evaluation method which was applied to Lithuanian roadscape.

II. STUDY OBJECT

Main Lithuanian roads and their landscapes – arterial roads, which are labelled as European arterial roads and corridors of the network of European roads, except for bypasses, – are chosen for the research:

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A1 road Vilnius–Kaunas–Klaipėda, the road route is consistent with the route E85 of the European arterial road and the route IXB of the European road network;

A2 road Vilnius–Panevėžys, the road route is consistent with the route E272 of the European arterial road;

A3 road Vilnius-Minsk, the road route is consistent with the route E28 of the European arterial road;

A5 road Kaunas–Marijampolė–Suvalkai, the road route is consistent with the route E67 of the European arterial road and the route of the I corridor of the European road network; the length Kaunas-Marijampolė is consistent with the corridor IXB of the European road network; the road is a part of Via Baltica highway;

A6 road Kaunas-Zarasai-Daugavpils, the road route is consistent with the route E262 of the European arterial road; this road, built in 1830-1835, is the path of the antique post canal St. Petersburg-Warsaw;

A7 route Marijampolė–Kybartai–Kaliningrad, the road route is consistent with the route E28 of the European arterial road;

A8 road Panevėžys–Aristava–Sitkūnai, the road route is consistent with the route E67 of the European arterial road and the route of the I corridor of the European road network;

A9 road Panevėžys–Šiauliai, the road route is consistent with the route E272 of the European arterial road;

A10 road Panevėžys–Pasvalys–Bauska, the road route is consistent with the route E67 of the European arterial road and the route of the I corridor of the European road network; this arterial road is a part of Via Baltica highway;

A11 road Šiauliai–Palanga, the road route is consistent with the route E272 of the European arterial road;

A12 road Rīga–Šiauliai–Tauragė–Kaliningrad, the road route is consistent with the route E77 of the European arterial road and the route of the IA corridor of the European road network;

A13 road Klaipėda– Liepāja, the road route is consistent with the route E272 of the European arterial road;

A15 road Vilnius-Lida, the road route is consistent with the route E85 of the European arterial road;

A16 road Vilnius–Prienai–Marijampolė, the road route is consistent with the route E28 of the European arterial road.

Though some of the roads extend into cities situated in neighbouring countries (Poland, Latvia, Russia, Belarus), only the road segments in the territory of the Republic of Lithuania are investigated. The total length of the analyzed roads reaches 1603.76 kilometres.

III. Method

The offered method enables to express the descriptive attribute *hedonomic*s by a formula with numbered values. The method is composed of three parts, regarding: a) the preparatory field research, b) the sociological research, c) the identification of factors determining hedonomics (Fig. 2).

The preparatory field research is an investigation of roadscapes in the field, employing photo-fixation. To identify concrete places of the photo-fixation, we rely on peculiarities of landscape perception which are presented by J. Bučas and G. Cullen. According to J. Bučas, there are three expositional zones of anthropogenic objects: predominance of scale (up to 3h, where h – an object height), predominance of scenery (up to 3.5 km) and the zone of psychological effect (up to 6 km) [24]. The zone of the predominance of scale is not suitable for performing photo-fixation because of its low level of coverage. However, the zone of psychological effect includes too big territories where distant objects either are not seen or are seen but become completely impersonal. Therefore, the best zone for performing photo-fixation is the zone of visual predominance, or predominance of scenery (objects seen beyond the respective boundaries are perceived as an unclear background). It means that landscapes should be photographed as close as each 3.5 km at least. The distance suits the research if the corresponding road is built on a flat landscape and if there is a considerable visual space around it. Otherwise, the distance must be shortened in places with altering landscapes, where a prominent dominant is inserted. While analyzing cityscapes, G. Cullen founds that when a person is moving on a street as in one space, he/she feels being HERE. When an individual turns to another street, he/she leaves behind one space and enters another one which, again, becomes the being "here". Conversely, whenever a person sees a further road, a square, etc., he/she perceives the space in the distance as THERE. The perception of the road spaces, while travelling through them, is named "serial vision" by G. Cullen [25]. The perception of roadscapes, in case they are not long straight roads, is close to the perception of streetscape described by G. Cullen. For instance, if a road has a turn beyond which new scenery greets, an individual before the turn feels being in one space – "here"; and if the person sees another space behind the turn, the space is associated with "there". The same associations arise while driving on a road in a mountainous landscape. Based on the above developed characteristic features of the perception of landscapes, places of the photo-fixation of roadscapes are identified: a) if a route is straight and a road is located in a flat landscape – as often as each 3.5 km at least, b) in the places of alteration of landscapes, c) when a prominent dominant appears within a landscape, d) after a turn or on the top of a hill, when one merges into another space, or "there".

Moreover, days with similar weather conditions must be selected for photo-fixation. Since a focusing angle of a camera is narrower than a field of human sight, it is purposive to trace sceneries overlooked by roads with several photo-shots: while standing in the point of observation, one should rotate slowly and make pictures. Thus, the photo-shots can be integrated into a one-piece picture reflecting the scenery of the landscape perceived by an onlooker from one point of observation. This technique is applied to sweeping landscapes.

Sociological research. The method used in the research was a quantitative survey. Its instrument – a questionnaire – is composed of three parts: a) introductory part which presents the topic of the survey and its major goals, b) main part including questions about presented pictures of roadscapes, c) concluding part dealing with the respondents' demographic characteristics, such as gender, age, education, etc.

The main part of the questionnaire is composed of the numbered pictures of the roadscapes of the research, and questions about them. Evaluation criteria are based on Kansei Engineering method. Recently, the method has been used in the early stage of creation of a product in order to make the

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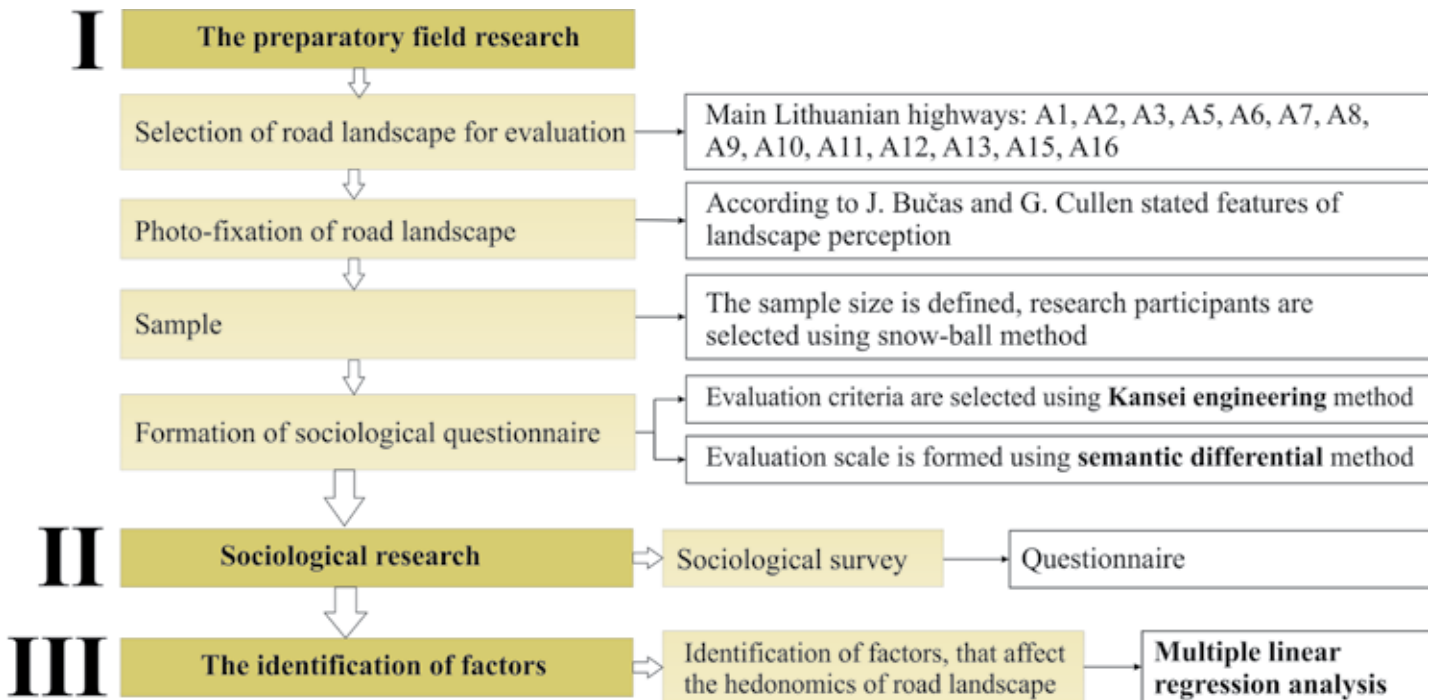Irina Matijošaitienė, Inga Stankevičė. Hedonomic Roadscapes in the Context of Urban Sprawl

Fig. 2. The developed method for hedonomics of a road landscape to express.

product hedonomic. Kansei Engineering method allows measuring the perception and enables to relate it to criteria of design, beauty and aesthetics. The method is aimed at finding out and evaluating customers' opinion about a product, and establishing a quantitative interconnection between the customers' answers and features of the design. Literature review reflects, unfortunately, a few examples of the method applied in the land management and urban development. C. Llinares and A. F. Page [26], with regard to Kansei Engineering method, analyzed a dependence of a choice of a living place in a city from perception of the respective urban landscape. With reference to the method, we have distinguished 28 words and phrases, describing road landscape, from scientific literature. Then, they were interconnected and constituted 14 pairs of opposing words and phrases. The antonyms are the following: interesting-boring, natural-artificial, safe-unsafe, varied-monotonous, beautiful-nasty, outstanding-ordinary, harmonious-chaotic, sophisticated-rough, enabling relaxation-enabling aggression, majestic-modest, pleasant-unpleasant, elements match with the surrounding environment-elements do not match with the surrounding environment, left an intense positive impression-did not leave any impression, I would like to drive on this road-I would not like to drive on this road. The scale for evaluating the criteria is based on Semantic Differential method. The scale includes five equal steps from the worst to the best value in the Kansei words and phrases. However, in order to keep the respondents in the state of thinking while filling in the questionnaires, circles were assigned to the values: the smallest circle meant the least of benevolence, and the biggest circle meant the most of benevolence. Moreover, not only the sequence of the circles varied from line to line, but the sequence of the distinguished pairs was mixed from picture to picture as well.

Identification of factors determining hedonomics. In order to express the descriptive attribute *hedonomics* by a formula

with numbered values and identify what factors determine hedonomics of a roadscape, multiple linear regression analyses were employed. Regression analysis is often applied to practical research: to forecast winners of elections, to analyze dependence of some variables on other ones. Multiple regression and correlation analyses were used by P. Cook [27] in order to evaluate the picturesqueness of the Great Plains of the USA, and R. Clay [28] used correlation, regression and factor analyses in order to investigate variables describing the picturesqueness of California's roadscape. In this paper, all the variables, representing the evaluation of the roadscape by different aspects, are ordinal, and evaluation scale varies from 1 to 5. Thus, we presume that intervals between ranks are equal: by doing so, we assimilate conditionally the ordinal variables with interval ones, which, in turn, allows performing regression analysis.

IV. Results and Discussion

The photo-fixation of the roadscape was performed in May 2010, when the gamut of colours of natural environment was extremely vivid. Sunny days with similar nebulosity were chosen for the photo-fixation in order to ensure that part of the pictures potentially made in cloudy weather conditions would not suffer from unjust evaluations because of poor opinions about gray-looking landscape. With reference to the application of the designed methods, 314 pictures of investigated road landscape were used for the further analysis.

To perform the sociological research, a quantitative survey was used. The questionnaires were delivered to the respondents in three ways:

1. questionnaires with questions and pictures of the roadscape were delivered to respondents individually; this fashion was applied to respondents who did not have or had a limited access to a computer and the internet;

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the respondents' (N=36) range of age varied from 18 to 81 years old;

2. questionnaires with the questions (without pictures) were delivered to respondents gathered in one auditorium, and the pictures of the roadscape were demonstrated on a large screen, by using a visual projector and a personal computer; a demonstrative version of a sequence of the pictures was prepared in advance with the help of Microsoft Office PowerPoint 2007; the respondents' (N=83) range of age varied from 22 to 46 years old;

3. questionnaires with questions and the pictures were placed in a portal of the internet-based surveys; the questionnaires were accessible to all who wanted to participate in the survey or had an electronic link to the survey; the respondents' (N=371) range of age, as well as gender, varied.

The total number of respondents is N=486. The gathered data were processed with a statistical software package *PASW Statistics 17.0*.

Results of the regression analysis revealed that moduli of standardized residuals of two variables were higher than 3.5 (both cases No. 191 and 205 $|S^2_e| = -5.83500$). The outliers could misrepresent the results, therefore they were excluded, and the analysis was repeated without them (sample size was *n*=484 in this case). First of all, we have identified on which variables (from all the variables representing the roadscape) and how strongly the variable "*hedonomic*" depends.

Seven models of regression analysis were proposed. With reference to the table of coefficients and ANOVA regression analysis, all the β-coefficients were statistically significant (p=0.000 < α=0.05). Multiple regression analysis showed that the 5th, the 6th and the 7th models had the biggest adjusted determination coefficients r^2_{adj} and the smallest standardized regression errors S^2_e, therefore only these models were chosen for further analysis. According to the table of coefficients, the variable "*outstanding*" had a very small beta coefficient (β=0.079) in the 6th model, and the variable "*majestic*" had a very small beta coefficient (β=-0.082) in the 7th model as well. It meant that the variables too slightly influenced the regression equation and, accordingly, the variable "*hedonomic*". Therefore, the 6th and the 7th models were eliminated. The regression equation is thus based on beta coefficients of the 5th model.

The regression equation is the following:

Hedonomic = 0.615 + 0.225*Beautiful + 0.195*Varied + 0.167*Want to drive + 0.140*Left positive impression + 0.119*Safe.

The linearity of the regression equation was confirmed (according to ANOVA table, p=0.000 < α=0.05), and the hypothesis about the equality of the coefficients to zero was denied (p=0.000 < α=0.05). Thus, the regression equation is suitable for making forecasts. The dispersion of the residuals was analyzed through a scatter-plot and appeared to be constant. The normality of distribution of the residuals was verified by a histogram, Normal P-P plot and Kolmogorov-Smirnov test (p=0.328 > α=0.05), and appeared to be consistent with normal distribution. The problem of multicollinearity is absent in the model because all the coefficients are below 4.

With reference to the equation and the table of coefficients, we can be 95% certain that: if beauty of a roadscape increases by 1 conditional unit, the road hedonomics will increase by 0,144-0,305 conditional units; if variety of a roadscape increases by 1 conditional unit, the road hedonomics will increase by 0,127-0,263 conditional units; if the wish to drive on a road increases by 1 conditional unit, the road hedonomics will increase by 0,092-0,242 conditional units; if left positive impression increases by 1 conditional unit, the road hedonomics will increase by 0,066-0,214 conditional units; and if the road safety increases by 1 conditional unit, the road hedonomics will increase by 0,066-0,214 conditional units.

The equation shows that an individual's opinion about if a roadscape is hedonomic depends on the roadscape beauty, variety, as well as an individual's willingness to drive on that road, positive impression left and the road safety. Nonetheless, we would like to emphasize that other factors not included in the research have a greater impact on a roadscape hedonomics. The provided regression equation accounts for 50.3% of the total dispersion, while other factors determining hedonomics of roadscapes remain trackless. Thus, tracking the missing factors and forming a refined regression equation is a challenge for further research in the area.

V. Conclusions

The sprawl of roads is closely related to the expansion of cities. The latter phenomenon conditions the rise of new roads and built-in territories or development of existing urban structure. The creating of hedonomic road landscape should be a part of sustainable growth.

The created method enables to express hedonomics of a roadscape through independent variables (with their weight factors). The method can be applied in various countries, but the regression equation can be applied just in countries or regions with a similar landscape and culture to Lithuanian.

The results indicate a formula through which the descriptive attribute hedonomic is expressed. The factors influencing hedonomics of a roadscape have also been revealed: beautiful, varied, leaving a positive impression, and safe roadscape which causes willingness to drive down it. According to their sequence, the weight factors of the variables are the following: 0.225, 0.195, 0.167, 0.140, 0.119.

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Participant of more than 26 scientific conferences. Author and co-author of 24 research papers.
• **Gražulevičiūtė-Vileniškė, Indrė; Matijošaitienė, Irina**. Cultural Heritage of Roads and Road Landscapes: Classification and Insights on Valuation // Landscape Research. Abingdon: Routledge Journals, Taylor & Francis Ltd. ISSN 0142-6397. 2010, Vol. 35, no. 4, p. 391-413. [ISI Web of Science; Applied Ecology Abstracts; Biological Abstracts].
• **Matijošaitienė, Irina**. Identification of Hedonomic Road Landscape in Lithuania // Environmental Research, Engineering and Management = Aplinkos tyrimai, inžinerija ir vadyba. Kaunas: Technologija. ISSN 2029-2139 (On-line). 2010, No. 4(54), p. 72-78. [VINITI; CAB International; CSA; INSPEC; EBSCO].
Projects: author and co-author of over 50 architectural and interior projects, co-author of 1 urban structure research project.

Research interests: road and city landscape, hedonomics, ergonomics, statistics, space syntax, Kansei engineering.

Social and pedagogical activity: since 2008 is a member of the organizing committee of the Olympiad in Drawing for the pupils. In 2009 – award "Best Lecturer of the Year 2009" presented by students.

Inga Stankevičė (Kaunas, 1984), Bachelor in Political Sciences and International Relations (Vilnius University, VU, 2007), MBA (Kaunas University of Technology, KTU, 2009), Doctoral student, research subject – *Institutional Interpolation of Innovation Strategies of Firms*, tutor Prof., Dr. Giedrius Jucevičius (KTU, since 2009). Exchange student at Bergen University (UiB), Norway (2005–2006), visiting researcher at the University of Geneva (UNIGE), Switzerland (2009–2010).

Co-author of a full (4 years) KTU Bachelor Program *Leadership*, and of a full semester course of KTU Bachelor Program in *Leadership – Virtual Networks*. Lecturer in the courses of *Modern Management*, *Value Innovation*, *Networking*, and *Virtual Networks*. Participant of various scientific conferences (Denmark, Latvia, Lithuania, Spain), the author of five scientific publications. Anonymous reviewer at the

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Irina Matijošaitienė, Inga Stankevičė. Hedonomic Roadscapes in the Context of Urban Sprawl

Baltic Journal of Management. Researcher in various contracted scientific projects (2006, ANALYST-TRAINEE, Public Policy and Management Institute, PPMI, Lithuania; the projects contracted by the Ministry of the Interior of the Republic of Lithuania, Lithuanian Development Agency, the Ministry of Education and Science of the Republic of Lithuania, and executed in collaboration with Business Mobility International, Belgium, ECORYS, the Netherlands. CUSTOMER SERVICE MANAGER at JSC *Runway International* (since 2007).

Research interests: value marketing, future forms of economics and businesses, virtuality; comparative political and social economics; innovation strategies; applied statistics.

Grants, honours: Grant for implementing the research at UNIGE (2010, administered by the Research Council of Lithuania, provided by the European Social Fund Agency), Scholarship for outstanding study results (2009, awarded by the Rector of KTU to 22 students out of about 18,000), Certificate of the best graduate of Lithuanian technical universities in 2009, Grant for perfect master thesis (2009, awarded by the Department of Strategic Management, KTU), Erasmus scholarship for studies at UiB (2005).

Memberships: DRUID Society (since 2010).

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Ирина Матийошайтене, Инга Станкевиче. Гедономичные ландшафты дорог в контексте городской застройки

Такие глобальные проблемы, как дисгармония между городской территорией и природной средой, загрязнение воздуха, глобальное потепление, разрастание городов, стали особенно актуальными в последние десятилетия. Строительство дорог тесно связано с разрастанием города: если город растет – дороги и другие объекты инфраструктуры должны быть построены на новой урбанизированной территории, и наоборот, если есть дороги – там всегда будет возможность разрастания города в направлении дороги. Разрастание нельзя остановить, мы можем его только контролировать, делая его целесообразным для общества. Один из способов сделать окружающую среду приятной – формировать гедономичный ландшафт, в том числе, гедономичный ландшафт дорог. Гедономика – совершенно новая отрасль науки, которая тесно связана с эргономикой. По словам П. Хэнкока [3], если посмотреть на предложенную Маслоу пирамиду человеческих потребностей, мы могли бы сравнить ее с иерархией эргономики и гедономики. Эргономичные потребности, такие как безопасность, функциональность и удобство использования, будут в нижней части пирамиды, а гедономичные потребности, такие, как удовольствие и личное совершенство, будут в верхней части пирамиды. Дальнейший анализ литературы и сравнение фактов в отношении гедономики позволили приятный дорожный ландшафт назвать гедономичным. Поскольку неизвестно, какой дорожный ландшафт является гедономичным, или приятным, авторы дают некоторое представление о выявлении особенностей дорожного ландшафта. В статье представлен метод идентификации гедономичного дорожного ландшафта на основе исследования. Метод исследования состоит из подготовительной стадии с использованием фотофиксации дорожного ландшафта, метода Канзай инженерии (англ. Kansei) и техники SD (семантического дифференциала), далее используется метод линейной регрессии. Уравнение регрессии, которое показывает факторы, влияющие на гедономичность дорожного ландшафта, является результатом исследования, которое было проведено на дорожном ландшафте Литвы.