RISKS AFFECTING CITY ATTRACTIVENESS

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Abstract. The competition among cities contributes to raising new strategic targets; in any case the most important is to provide your city with the necessary human resources – independent people, investors / entrepreneurs and guests/ tourists. As a result, each municipality must take into account many factors in order to avoid cause havoc. The potential risks must be taken into account.

The risk management process in the context of attractiveness of the city is a relatively little-studied issue. The paper aims to assess the risks that influence attractiveness of a city and determine their ranking according to the city's attractiveness criteria. The paper is focused on the risk analysis phase, based on attractiveness of a city as the city's strategic goal. The risks were grouped into eleven city attractiveness criteria. An expert survey was carried out, resulting in the risk set for each rank within single criteria. The obtained expert survey data will be used in municipalities during the planning work, because it will give the opportunity to be aware of the major risks, the consequences which may affect city attractiveness.

Keywords: city attractiveness, risk analyses, risk management JEL code: H75, 018, P25, R1, R58

Introduction

Decision-making is an integral part of management, because constantly among different variants the best one must be chosen which is characterized as a greater benefit and / or a smaller loss. In other words, possible risks must be taken into account – potential losses or gains, probability. As a result, the decision-making process becomes a risk management process. The risk identification and analysis process can significantly help in making numerous decisions of various levels of management, in the result of which potential risks, their probability and consequences are known.

Risk classification is available for businesses. The influence of globalization and mobility lead to the increasing competition among cities where the main object of the competition is the man in different capacities – as a resident, investor or a tourist. Thus, each city has one major goal – to become attractive to live, build a business or go on an excursion there. For the city management it is necessary to take appropriate decisions in order to promote attractiveness of the territory. Also, in this case the decisions are associated with the risks that are needed to be taken into account.

The aim of this paper is to assess the risks that influence city attractiveness and determine their ranking according to the city attractiveness criteria.

The implemented tasks to achieve the aim:

- Theoretical aspects of risk management were researched;
- A survey of experts was carried out;
- On the basis of the expert survey, the assessment of risk materiality was carried out.

The hypothesis of the paper is: the main risks are objective risks.

Data acquisition and processing methods were used in the research study: synthesis and analysis, the monographic method, an expert survey, concordance coefficient calculation.

The main sources are Schneier, 2000; Rejda, 2014; Williams, 2004; J.Wm. Kallman and R. V. Maric 2004.

Theoretical aspects of risk management process

In substance, risk management contributes to safety; internationally renowned security technologist B. Schneier's citation is: "Security is a process, not a product" (Schneier, 2000). Consequently, risk management is perceived as a continuous and planned process. In the risk management theory many authors (G. C. A. Dickson (1995), G. E. Rejda (Rejda, 2014), L.Williams (Williams, 2004)) have studied the risk management process determining from three up to seven process steps providing risk identification, assessment, mitigation and control.

The increasing role of risk management has changed the risk management process, it becomes wider, providing more serious work at every stage of the process and becoming a major support to the decision-making process. Americans J. Wm. Kallman and R. V. Maric (2004) offer a new risk management paradigm. It consists of five steps and each step consists of three stages (Fig.1).

The first step of risk management process is programme development, which means that the risk management process is planned and organized. Developed by the risk management process, the plan facilitates the decision-making process, defines managers' responsibilities and helps them to assess the potential risks.

Within the framework of risk analysis, risks are identified, measured and assessed. Business-related risk identification and grouping process is relatively easier, as a risk management manual is worked out, which facilitates risk analysis for entrepreneurs.



Fig.1 The process of the new risk management (Source: compiled by the author, based on Kallman, 2004)

The next step in the process of risk management is associated with the corresponding solutions and awareness of risk management, assessing both the qualitative and quantitative impact of the risk on each solution.

A decision process, according to J. Wm. Kallman and R. V. Maric, in the risk management process, is a relatively new phase, which requires not only the financial impact of the risk solution but also the ethical impact of the solution is evaluated. The necessary human and financial resources and time needed must be identified for the solution (Kallman, 2004).

A system administration phase solution provides the assessment of the risk solution effectiveness and their impact on achievement of the objectives.

Based on this risk management process, the author focuses on the risk analysis phase. To search for appropriate solutions and facilitate the risk management process of the city administration, it is necessary to be aware of potential risks. The city, as well as companies is exposed to many different risks. Therefore, the author of this paper takes into account both her research and the project "linguoculturological and socioeconomic territorial identity".

Study design

The city is affected by many risks. In her study, the author, as the city's strategic goal, has selected the city's attraction. In order to facilitate the risk identification and grouping, the author studies the twelve criteria of the citv's attractiveness developed under the project "Linguoculturological aspects of territorial identity and socio-economic development of the region of Latgale". However, in this research study, the author used only eleven criteria: accessibility and mobility, quality of health services, availability and accessibility, quality of social care service, accessibility, quality and distribution of culture, quality of sports and recreation service, availability and accessibility, ecological quality, participation, diversity of community life, quality of services provided by national and municipal administrations, availability and accessibility, commerce and service quality, availability and accessibility, affordability and quality of housing, quality of physical security and accessibility. The criterion "economic development, employment and material well-being of the population" was not used in the research study because of the associated risks which are investigated separately.

Initially, potential risks were identified for each of the eleven criteria. Their number is different for each criterion.

7 academics with practical experience from Latvia and Poland have been invited as experts.

An expert consistency examination of each criterion was carried out calculating the concordance coefficient W (Formula 1, Formula 2 and Formula 3).

$$W = \frac{12*S}{m^2*(n^3 - n)}$$
(1.)

$$S = \sum_{i=1}^{n} (R_i - \bar{R})^2$$
 (2.)

$$\bar{R} = \frac{1}{2} * m * (n+1)$$
(3.)

W – concordance coefficient

- S sum of quadratic deviations
- \overline{R} average
- R_{i-i} its object-rating
- m appraisers
- n objects

The concordance coefficient may be within the range $\ge 0 \le W \ 1 = W$ 1 is full coherence. W = 0 means complete disagreement.

If the resulting concordance coefficient is 0 < W > 1, then, using the Pearson chi-square (x²) (Formula 4), the null hypothesis (H₀) is tested.

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H₀: expert opinions are independent H₁: expert opinions are not independent

$$x^{2} = \sum_{j=1}^{n} \frac{(x_{emp.} - x_{teor.})^{2}}{x_{teor.}}$$
(4.)

 x_{emp} . – empirical distribution of the frequency range or in a group x_{teor} . – signs of a theoretical distribution frequency range or a group x^2 distribution tables of critical values are in accordance with the significance level α (0.05) and the degrees of freedom (ν = (n-1) (m-1)).

The null hypothesis (H₀) is confirmed when the x_{emp} . $< x_{teor}$... If x_{emp} . > x_{teor} . Then the alternative hypothesis (H₁) is accepted.

Based on its findings, a definite rank within a single criterion was assigned to each risk.

Results of the survey of experts

Calculations were made and the results obtained according to the study design.

Risks	Score*	Rank
	Jeore	itum
Road surface quality in the city (urban road infrastructure)	15	1
The time spent on getting from the city to other cities in the	17	2
region, the capital city, airport, etc.		
Urban road structure (streets, pavement location, comfort access	35	3
within the city)		
Public transport diversity of getting to / from the city / s	36	4
Public transport routes from / to the city / s	38	5
Quality of public transport	40	6
Public transportation cruising frequency of getting to / from the	41	7
city		
Number of parking spaces in the city	42	8
Total level of satisfaction of population with the city's	51	9
accessibility and mobility		
Total:	315	Х

Table 1 Criterion 1 "Accessibility and Mobility" (Source: author's calculations based on the survey of experts)

*Sum of experts score

Table 1 shows that the estimated concordance coefficient W = 0.37 is in the proposed range of 0 <W> 1, which shows the coherence of expert opinions and indicates the degree of coherence of views. The null hypothesis (H₀) is accepted because x_{emp} . = 53.46 and x_{teor} . = 65.2. The performance rank confirms that the greatest risk associated with the city's attractiveness quality is connected with the road surface and road structures within the city, as well as with the time needed to get to / from the city. The visual appearance of the city is important for the city residents, tourists / visitors and entrepreneurs / investors, as it measures the degree of attractiveness in a direct way. Globalization has also expanded the understanding of the reach and uses the measure of time but not the distance. Expert ratings confirm the importance of this venture. The distance from one city to another may be measured in hundreds of kilometres, but it is important how much time it takes to cover this distance. For each city user group, that risk impact and importance varies but generally reduces the interest in the city. The damage caused by this risk:

- the city is selected as a tourist object, if it has an advantageous location, or good access;
- investors choose the city where one can easily and quickly get to saving time spent on the way;
- population in particular is not growing as a result of immigration.

Table 2 Criterion 2 "Quality of health care, availability and accessibility" (Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Presence of outpatient medical facilities in the city	16	1
Number of medical specialists in the city	17	2
Population satisfaction with the availability of medical services in	22	3
the city		
Medical service prices and their adequacy to the purchasing	26	4
power of the population		
Population satisfaction with the quality of medical services in the	31	5
city		
Number of beds in the hospital	35	6
Total	147	Х

Table 2 indicates that the estimated concordance coefficient W = 0.34 is in the proposed range of 0 <W> 1, which shows coherence of experts' opinions and points the degree of coherence of views x_{emp} . = 25.81 and x_{teor} . = 43.8, it means that the null hypothesis is accepted (H₀).

In health care, the highest risk refers to the outpatient medical facilities and lack of health professionals in the city. These risks are attributable to medical care accessibility.

The occurrence of these risks affects attractiveness of a city considerably; however, it should be taken into account that health care is a public responsibility. Currently, there are a lot of unresolved issues in this area which significantly affect medical professionals' choice to work outside the capital city or the country.

Table 3 Criterion 3 "Social care quality and availability"
(Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Amount of social care budget in the city	10	1
Types of social care services in the city	17	2
Availability of social care services in the city	26	3
Risk of population growth that need social care	29	4
services		
Number of social workers in social care institutions	34	5
Population satisfaction with the quality of social	37	6
services in the city		
Population satisfaction with the availability of social	43	7
services in the city		
Total	196	Х

Table 3 indicates that the estimated concordance coefficient W = 0.58 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views. x_{emp} . = 20.73 and x_{teor} . = 51.0, it means that the null hypothesis is accepted (H₀).

In social care services, as the key risks, experts consider the social care budget and the types of services. The city, which is able to support its population, is considered to be much more attractive. However, the quality of social care services and their availability is a dual-evaluated question in the context of the issue of attractiveness. The Social Services and Social Assistance Law (effective from 01.01.2003) determines the types of services that should be ensured by the municipality, but the quality of services largely depends on the budget of the available financial resources. But the relatively high demand for social care services showed negative trends in the municipality. For example, the increasing demand for heating benefits by retirement age people shows that the number of population of working age.

Table 4 indicates that the estimated concordance coefficient W = 0.43 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views. x_{emp} . = 44.25 and x_{teor} . = 58.1, it means that the null hypothesis is accepted (H₀).

Table 4 Criterion 4 "Education service quality and availability" (Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Availability of preschools	17	1
Education diversity in the city	21	2
Diversity of out-of-school/ adult education in the city	24	3
Quality of out-of-school/ adult education in the city	29	4
Qualification of city educational employees	30	5
Prices of out-of-school/ adult education	38	6
Population satisfaction with the quality of education and	46	7
education of interests in the city		
Population satisfaction with the availability of education	47	8
and out-of-school/ adult education in the city		
Total	252	Х

In educational services, according to the experts' assessment, the highest risk is related to availability of pre-school education in the city. At the end of parental leave, parents have an urgent problem to choose – to return to work or lose their jobs and continue to look after the child. And the diversity of education and out-of-school/ adult education means the development of lifelong learning.

Table 5 Criterion 5 "Culture, sports and leisure service quality, availability and accessibility"

(Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Diversity of cultural / sports events in the city	23	1
Suitable space / place for organizing events in the city	24	2
Leisure options in the city	25	3
Fee for attending cultural events	26	4/5
Compliance of proposed cultural / sporting services	26	4/5
with the interests of the population of the city /		
ethnicity / etc		
Number and diversity of amateur groups in the city	34	6
Population satisfaction with cultural, sports and	38	7
recreational facilities in the city		
Total	196	Х

Table 5 indicates that the estimated concordance coefficient W = 0.15 is in the proposed range of 0 < W > 1, which shows coherence of expert's opinions and points the degree of coherence of views. x_{emp} . = 42.9 and x_{teor} . = 51.0, it means that the null hypothesis is accepted (H₀).

Attractiveness and availability of recreational facilities in the city is no less important as job opportunities. According to the experts, there must be diversity of cultural/ sports events and appropriate infrastructure in the city. Assessment of the scores shows that, according to the experts, financial and quality aspects are no less important.

Table 6 Criterion 6 "Ecological quality" (Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Drinking water quality in the city	15	1
Air quality in the city	16	2
Existence and quality of bathing areas in the city	25	3
Population satisfaction with the quality of the air in the	30	4
city		
Population satisfaction with the quality of drinking	31	5
water in the city		
Population satisfaction with waste management in the	38	6
city		
Population satisfaction with the quality of bathing	41	7
areas in the city		
Total	196	X

Table 6 indicates that the estimated concordance coefficient W = 0.44 is in the proposed range of 0 < W > 1, which shows coherence of expert's opinions and points the degree of coherence of views. x_{emp} . = 34.17 and x_{teor} . = 51.0, it means that the null hypothesis is accepted (H₀).

City attractiveness can be significantly affected by drinking water and air quality. The relatively lower risk is related to existence and quality of bathing areas which are affected by seasonality and mobility.

Table 7 Criterion 7 "Participation, diversity of community life" (Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Relationship between the municipality and city residents /	16	1
businesses		
Access to information about opportunities to participate in	17	2
social / non-governmental organizations in the city		
Access to information on public consultations in the city	23	3 /4
Level of activity of population involved in the community	23	3/4
life		
Level of satisfaction of population with the opportunity to	26	5
participate in community life		
Total	105	Х

Table 7 indicates that the estimated concordance coefficient W = 0.15 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views. x_{emp} . = 20.29 and x_{teor} . = 36.4, it means that the null hypothesis is accepted (H₀).

The experts' degree of coherence is relatively lower in the assessment of risks related to these criteria. However, the highest rank involves a relation between the city administration and its users. The municipality's economic, political, etc. activities are focused on urban users, their interests and democracy.

Table 8 Criterion 8 "Quality and availability of administrative services provided by the national and local governments" (Source: author's calculations based on the survey of experts)

Risks	Score	Rank
Availability of state provided services in the city	13	1
Availability of municipality provided services in the city	16	2
Quality of state services provided in the city	19	3
Quality of municipality services provided in the city	22	4
Population satisfaction with state provided services in	38	5
the city		
Population satisfaction with services provided by	39	6
municipality in the city		
Total	147	Х

Table 9 indicates that the estimated concordance coefficient W = 0.74 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views. x_{emp} . = 12.45 and x_{teor} . = 43.8, it means that the null hypothesis is accepted (H₀).

According to the experts' assessment, the key risks are associated with the availability of services. It means that the accessibility of government services has a positive impact on the attractiveness of the city.

Table 9 indicates that the estimated concordance coefficient W = 0.45 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views. x_{emp} . = 40.78 and $x_{teo}r$. = 58.10, it means that the null hypothesis is accepted (H₀).

The diversity of available services impacts the city's attractiveness significantly, because it directly affects the quality of life. Despite the extensive web capabilities and e-commerce development, it is important that the city's residents can get the necessary services.

Table 9 Criterion 9 "Trade and service quality, availability and accessibility"

Risks	Score	Rank
Variety of services available in the city	17	1
Diversity of trade institutions in the city	19	2
Quality of trade institutions in the city	24	3
Quality of services available in the city	26	4
Population satisfaction with the quality of trade institutions	36	5
in the city		
Population satisfaction with the quality of services in the	39	6
city		
Population satisfaction with the availability of trade	43	7
institutions in the city		
Population satisfaction with the availability of services in	48	8
the city		
Total	252	Х

(Source: author's calculations based on the survey of experts)

Table 10 Criterion 10 "Housing availability and quality" *(Source: author's calculations based on the survey of experts)*

Risks	Score	Rank
Housing availability in the city	9	1
Quality of housing in the city	14	2
Population satisfaction with the availability of housing in	21	3
the city		
Population satisfaction with the quality of housing in the	26	4
city		
Total	70	Х

Table 10 indicates that the estimated concordance coefficient W = 0.69 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views. x_{emp} . = 4.83 and x_{teor} . = 28.90, it means that the null hypothesis is accepted (H₀).

The experts believe that the availability of housing is a major risk in accordance with the city's attractiveness 10th criterion. Housing can be explained by the availability of new housing constructions, which in turn indirectly characterizes the socio-economic situation in the city.

Table 11 indicates that the estimated concordance coefficient W = 0.42 is in the proposed range of 0 < W > 1, which shows coherence of experts' opinions and points the degree of coherence of views x_{emp} . = 33.44 and x_{teor} . = 51.0, it means that the null hypothesis is accepted (H₀).

Table 11 Criterion 11 "Physical security quality and availability" (Source: author's calculations based on the survey of experts)

Risks	Score	Rank
The crime rate in the city	15	1
Number of the State police staff in the city	20	2
Presence of the Municipal Police in the city	22	3
Presence of Rescue services in the city	29	4
Level of satisfaction of population with safety in the city	32	5
Level of satisfaction of population with the police	34	6
performance quanty		
Level of satisfaction of population with the quality of rescue	44	7
services		
Total	196	Х

According to Maslow's hierarchy (Maslow, 1943) of needs, safety is the next group after physiological needs. According to the experts, just the level of crime is the greatest risk for attractiveness of cities and if there is no adequate number of national and municipal police, the crime rates may be relatively higher.

The obtained results of the survey of experts show the most important risks which should be taken into account according to each city's attractiveness criterion. The highest performance rank indicates the significance of the risk and the need to pay serious attention to it. For each criterion, both objective and subjective criteria were mentioned as the potential risks. The experts consider the risks that characterize a subjective opinion to be less risky than the risks that characterize an objective situation. Despite the fact that local governments compete with each other, the services provided are defined in legal documents, the possibilities of which are largely dependent on the geographical location, which is not possible to change and so on. Therefore it is essential for local authorities to pay attention to certain risk mitigation, which in the long-term enables the possibility to avoid negative socio-economic trends (e.g. population migration, high unemployment, etc.).

Despite the fact that H_0 was confirmed in all cases, the author believes that the risks assessment of the 5th and 7th criteria could be repeated, because the coefficient of the expert assessment coherence is relatively low (see Table 12).

Criterion name	Coherence coefficient	Number of risks
Criterion 8 "The quality and availability of administrative services provided by the national and local governments"	W=0.74	6
Criterion 10 "Housing availability and quality"	W=0.69	4
Criterion 3 "Social care quality and availability"	W=0.58	7
Criterion 9 "Trade and service quality, availability and	W=0.45	8
accessibility"		
Criterion 6 "Ecological quality"	W=0.44	7
Criterion 4 "Education service quality and availability"	W=0.43	8
Criterion 11 "Physical security quality and availability"	W=0.42	7
Criterion 1 "Accessibility and Mobility"	W=0.37	9
Criterion 2 "Quality of health care, availability and accessibility"	W=0.34	6
Criterion 5 "Culture, sports and leisure service quality, availability and accessibility"	W=0.15	7
Criterion 7 "Participation, diversity of community life"	W=0.15	5

Table 12 Expert evaluation of survey results

Conclusions and suggestions

The municipality can use the proposed risks classification according to each criterion in order to achieve the strategic development aim – city attractiveness. Risk ranks within each criterion are used as guidance on the risks which governments should pay special attention to because their effects are significant for achieving the strategic goal – to achieve city attractiveness.

The hypothesis of the paper is: the main risks are objective risks – verified.

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PILSĒTAS PIEVILCĪBU IETEKMĒJOŠIE RISKI

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Kopsavilkums

Pilsētu savstarpējā konkurence veicina arvien jaunu stratēģisko mērķu izvirzīšanu, idejiski apzinoties, ka jebkurā gadījumā svarīgākais ir nodrošināt savu pilsētu ar nepieciešamajiem cilvēkresursiem – patstāvīgajiem iedzīvotājiem, investoriem/uzņēmējiem un viesiem/ tūristiem. Rezultātā katrai pašvaldībai ir jāņem vērā daudzi faktori, lai pieņemtie lēmumi neradītu postošas sekas. Ir jāapzinās iespējamie riski.

Lēmumu pieņemšana ir neatņemama menedžmenta sastāvdaļa, jo nepārtraukti ir jāizvēlas starp dažādām alternatīvām labākā, kas raksturojas kā lielāks ieguvums un/vai mazāks zaudējums. Citiem vārdiem sakot, jāapzinās iespējami riski – iespējamie zaudējumi vai ieguvumi, iestāšanās varbūtība. Rezultātā lēmumu pieņemšanas process kļūst par risku vadīšanas procesu. Daudzo lēmumu pieņemšanā dažāda līmeņa vadītājiem ievērojami var palīdzēt risku identifikācijas un analīzes process, kura rezultātā ir zināmi iespējamie riski, to iestāšanās varbūtības un sekas.

Pieejamās risku klasifikācijas ir paredzētas uzņēmumiem. Globalizācijas un mobilitātes ietekmē arvien vairāk palielinās konkurence starp pilsētām, kur galvenais konkurences objekts ir cilvēks dažādos statusos – kā iedzīvotājs, investors vai tūrists. Līdz ar to, katrai pilsētai ir viens būtisks mērķis – kļūt pievilcīgai, lai tur vēlētos dzīvot, veidot uzņēmumu vai doties uz turieni ekskursijā. Pilsētvadībai ir nepieciešams pieņemt atbilstošus lēmumus, lai veicinātu teritorijas pievilcību. Arī šajā gadījumā pieņemamie lēmumi ir saistīti ar riskiem, kurus nepieciešams ņemt vērā un apzināties to nozīmīgumu.

Risku vadības process pilsētas pievilcības kontekstā ir salīdzinoši maz pētīts jautājums. Raksta mērķis ir izvērtēt pilsētas pievilcību ietekmējošos riskus un noteikt to rangu atbilstoši pilsētas pievilcības kritērijiem. Mērķa sasniegšanai īstenotie uzdevumi:

- veikta risku vadības teorētisko aspektu izpēte;
- veikta ekspertu aptauja;
- pamatojoties uz ekspertu aptaujas datiem, veikta risku būtiskuma izvērtēšana.

Pētījumā izmantotās datu ieguves un apstrādes metodes: sintēzes un analīzes, monogrāfiskā metode, ekspertu aptauja, konkordances koeficienta aprēķins.

Rakstā uzmanība tika veltīta risku analīzes posmam, pamatojoties uz pilsētas pievilcību kā pilsētas stratēģisko mērķi. Riski tika sagrupēti vienpadsmit pilsētas pievilcības kritērijos. Tika veikta ekspertu aptauja, kuras rezultātā noteikts katra riska rangs viena kritērija ietvaros. Iegūtie ekspertu aptaujas dati ir izmantojami pašvaldībās, veicot plānošanas darbus, jo tas dos iespēju apzināties būtiskākos riskus, kuru sekas var ietekmēt pilsētas pievilcību.

Atslēgas vārdi: pilsētas pievilcība, risku analīze, risku vadība.