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Development of a unique product: Perception of guests in Tourism in vineyard cottages on the local environment

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Abstract

Purpose and Originality: Tourism in vineyard cottages is new, authentic, unique tourism product, which involves the area of wine-growing land Posavje, with districts of Dolenjska (Lower Carniola Region), Bela Krajina and Obsotelje-Kozjansko, where are the wine-growing areas with vineyards and vineyard cottages. Tourists in vineyard cottages bring economic benefits to the local community.

Method: With the research we gained the information, where local residents can see positive and where negative impacts of guests who come to the vineyard cottages. As the part of descriptive approach in our research we used a method of a description about the opinion of local residents on impact of arriving tourists in tourist vineyard cottages on the local environment and the method of a compilation discoveries, observations and results. In the activities of analytical approach we are going on the base about the results of questioning individual cases and conclusion about opinion of local inhabitants in the area of marketing the tourism product Tourism in vineyard cottages.

Results: Considering the results of the research, individual interviews with guests in the area of product Tourism in vineyard cottages and responses in the local environment, we evaluate, that the product has unique, authentic, original and attractive approach with all the possibilities, that it becomes one of the most recognizable, wanted and paraded integral product of Slovenian tourism.

Society: New, innovative, attractive, unique and authentic product Tourism in vineyard cottages, which is developed in the wine-growing region Posavje, it has an extremely great potential, because it is one of the most recognizable forms of tourism in the countryside areas, and it has extra perspective with the creating local stories and connecting into the integral tourism products.

Limitations / further research: It is necessary, that also other owners of the vineyard cottages, who are not included into the product Tourism in vineyard cottages yet, manage their capacities and infrastructure and include into a model of organizing Tourism in vineyard cottages – economically organization, which is dealing with planning, development, organization, implementation, promotion and marketing.

Key words: tourism, vineyard cottages, guests, product, development, local environment.

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1 Introduction

Vineyard cottages were built modestly and intended for production, processing and storing the wine. Attic room was over the basement, where was bed and table for having lunch. Vineyard cottages were blossomed at the time of socialism, when people started to invest their savings in vineyards and started to build vineyard cottages. With the higher standard, they became more beautiful and comfortable, and they presented a symbol of status. Every resident of Dolenjska region had to have his own vineyard and produce the wine, usually Cviček, which is a special wine in Slovenian wine-growing, as it has very low alcohol content and a good effect on health. They also produced some other sorts of wine, such as Dolenjsko white wine, Blue Franconian and others.

People usually gathered in vineyard cottages by doing different winemaking chores as digging, pruning of grapevines, grape harvest etc. All the works in the vineyards were always finished by making »likof«, which meant feast, with homemade culinary delights, playing accordion and singing songs, especially at the time of autumn and spring, when people did most of the work. People also gathered here on different occasions, holidays and celebrations.

With the industrialism and at the end of the 20th century, a lot of vineyards were abandoned and caused visual degradation of cultural landscape. Older generations were unable to maintain this heritage, on the other side younger generations were not enthusiastic for continuing this tradition, because most of work was necessary to do by hand. Because of the jobs, people had less time, and they went to the vineyard cottages only for the necessary works. Vineyard cottages became empty, with the exception on weekends, when the place gathered neighbors and family. Because of the modern equipment, maintaining of cottages became very expensive, so the owners started to think how should this »dead capital« become alive and refine. That is how the idea of a development a unique tourist product Tourism in vineyard cottages was about to arise. One of the main initiators and operators was Tour agency Kompas Novo mesto, which cooperated with municipality of Mirna Peč. In 2009, they started with the founding of Consortium "Turizem v zidanicah", which members were interested in giving their vineyard cottages for a rent. Consortium "Turizem v zidanicah" had more than 100 members, 28 of them got the using permission, which was a term to include in the sales catalog, on the website and in the system of marketing.

Tourism in vineyard cottages has become one of the most recognizable tourist offer in few years. This type of tourism is mostly visited by guests of higher price rank, 85% of tourists come from foreign countries, mostly Germans, French and inhabitants of Benelux. The books of reviews are full of positive comments of offer, which is authentic and unique. There is no other place in the world, where you can rent a house in the middle of the wine hills, get an unique key of the wine cellar, pour your favorite local wine, explore surroundings, local culinary, visit spas, enjoy hiking, cycling, riding and water trails, visit events and experience other supplementary tourist activities. Guests mostly expose 3 elements of offer: cleanliness and orderliness of country, beauty of landscape and hospitality of locals. When the tourists

walk through this wine land it is usual, that they are invited to have a glass of wine, homemade bread, dried cold meat cuts or coffee, with some of the locals, which is really a surprise for them, as they are not used to the hospitality like that and that is how the locals make incredible impression.

Participants in tourism product "Turizem v zidanicah" are finding out, that tourists, who come to the vineyard cottages, are satisfied with the tourism products. Until now, they did not occupy with the parameter of measuring the satisfaction of local inhabitants and that kind of research did not exist until now. That is why the creators of this product, made a research about development of this unique product and perception of guests who come to the vineyard cottages, on the local environment based on available data, information and survey questionnaire with the company Kompas Novo mesto.

2 Case study and hypothesis

Tourism in vineyard cottages is part of wider circle of wine tourism, where we also name tourist roads, wine cellar tourism, wineries, "osmice", vineyard tourist farms and wine-tourist events. Tourism product, which is named as Tourism in vineyard cottages is presenting starting point for developing many other forms of tourism, based on using natural and created social resources, congruity of region development, development of countryside, conservation of material and non-material cultural heritage, which gives us a foundation for forming other integral tourism products and creating positive competition, with the emphasis on increasing complementarity and interactivity between the providers. Vineyard cottages with their contents are enabling interactivity between the providers as a way of synergy, formed tourism products and their characteristics in the local environment, with the arising of perfect satisfaction of guests and profit for offer holders. Of course we have in mind mostly creating different events based on a theme wine, wine tourism and many other forms of tourism (Veljković, Colarič-Jakše, 2014).

Case study is development of a unique product, in which we studied and researched the perception of guests Tourism in vineyard cottages on the local environment. There are currently 40 objects in a register about Tourism in vineyard cottages, dispersed on many wine-growing areas. 85% of guests come from foreign countries. Some of them stay in their rented vineyard cottages. Most of them explore local environment, Slovenia and neighboring countries. Until a while ago, local residents were used to a large number of homeland hikers, but today they can see more and more foreign tourists, which they meet walking, in cars, in local restaurants or bars and by visiting the events. Subject of the research is an opinion of local inhabitants, if there are positive or negative impacts on local environment, when guests arrive to the vineyard cottages.

Base hypothesis: Local residents believe that guests, which come to the vineyard cottages, have positive impacts on the local environment.

3 Purpose, goals and indicators of development of product Tourism in vineyard cottages

Purpose of this research is to gain the information about the opinion of the locals about the impact of guests, which come to the vineyard cottages on the local environment. With the research we gained the information, where local residents can see positive and where negative impacts of guests who come to the vineyard cottages.

Goal of this research is to find out and present opinions of residents about the impact of guests, which come to the vineyard cottages on the local environment. We want to gain the information about what are most of the positive and negative impacts seen by local residents, which will serve as a base for the development of this unique tourism product and direction for all those, who market this product.

Goal of developing tourism product Tourism in vineyard cottages is to become recognizable segment inside the tourist offer in the region and wider. With developed identity of a product Tourism in vineyard cottages is necessary to improve tourist offer on the destination and make it more recognizable and attractive. This product is presenting a possibility of continual development of many other forms of tourism, congruity of region development, countryside development, conservation of cultural heritage, which gives us base for developing other integral tourism products and making healthy competition with the emphasis on increasing stationary tourism (Colarič-Jakše et al., 2010).

There are important goals of quality products, which are by the opinion of author Colarič-Jakše and others:

- Ensure high level of technical and functional quality.
- Ensure services with standard and intense marketing of vineyard cottages in the area of Posavje wine region.
- Envelope development of new products, new lines of quality in wine tourism.

Indicators:

- Recognition of destination.
- Image and cleanliness of destination.
- Economic impacts for individuals and local community.
- Conservation of cultural landscape.
- Selling surplus goods (wine etc.)
- New business opportunities for youth.
- Supply in the destination.
- Waste and noise in the destination.
- Increasing criminal actions.
- Increasing alcoholism.
- Disappearing of the tradition.
- Building up new facilities in the wine growing areas.

4 Theoretical framework

Tourism in the perception of lay public is still a concept, which is based on traditional findings, even if it is changing really fast in the presenting forms (Veljković & Colarič-Jakše, 2014).

Key role in tourism belongs to tourists, who come to the tourist area, to the tourist providers, who pass the tourism products and local residents, who create a climate of tourist space.

Tourist is a person, a traveler, subjective factor of tourism and tour demand and also consumption in tourism (Veljković & Colarič-Jakše, 2014).

In the place of winegrowing region Posavje is developing a new tourism product – Tourism in vineyard cottages. Tourism in vineyard cottages is defined by the Article 14 of the Hospitality Industry Act - Zakon o gostinstvu Ur.L. RS 93/2007, on a way, that municipalities in their space acts, special delays or other acts define an option of room rental in the objects. Proposal of quality tourism in vineyard cottages is trying to reduce the imperfection, of that this type of tourism does not have any legal requirement for minimal standards for objects and equipment. The owners take an example of apartment for their base to equip their vineyard cottages. Tourism in the vineyard cottages has become unique and attractive tourism product of wine tourism intended for shorter stays of tourists, which are looking for authentic experience, peace and relaxation, presenting an added value for countryside. Tourism in vineyard cottages is primary tourism product, it allows accommodation or housing in the winegrowing cultural landscape and it is connected to all the secondary tourism products in the destination. Tourists can prepare themselves a meal in a vineyard cottage (apartment) from the ingredients, which are found in right surroundings, what can really be a challenge for guests. If there is no delight for cooking, the tourists can eat in local restaurants and tourist farms vineyard cottages guests receive a special discount card for local food suppliers, or they have it delivered in their vineyard cottages (catering). The possibility for making caterings is a pleasure for guests and opportunity for providers to estimate their work. Vineyard cottage tourism, as it was named in the strategy of development, is providing all the elements and the assumptions of active tourism in mosaic of several forms of green tourism (Veljković & Colarič-Jakše, 2014).

German sociologist Leopold von Wiese is remarking foreigner as curious traveler, when H.J. Knebel claims that this definition can be changed by the classification of two types: aggressive traveler, which is coming as a conqueror, or more indifferent traveler, which is not connecting with any of locals. It has changed a goal into asset. Indifferent traveler is not interested in any content connections with the locals and he does not want discover the local environment. This is a type of modern tourist, who is connected only with the members of a group, with which is he travelling. Some authors are critically discussing »commercialization of hospitality«, which is changing into the servility, as soon as the guest-local relationship overcomes with an economic motive of profit and the potential friendship is changing into strictly business relation. Global critics of tourism structures come from theories about dependence periphery from high-developed countries, which dominate the periphery, and also establishing the syndrome in dependence. In this case tourism becomes a form of imperialism

and neocolonialism in the several areas. Conflict theories are rejecting myth about tourism as encouraging factor of collaboration, peace and positive values between people and nation, and also warning on cultural paradox, caused by tourist arrivals and tourist development of a destination, fighting of values, destroying social balance (Horvat, 1999, str.: 21-23).

Goffman is analyzing structural division of social institutions on the stage and backstage. In front stage there are meeting a host, waiters and guests, when backstage is a place, where hosts can move to relax and prepare between separate performances. The stage presents a reception, saloons and offices and the backstage is laundry, kitchen, boiler room ... The hosts are working on stage and backstage, guests are only on stage, all the other inhabitants (outsiders) are exposed from both areas. In the backstage, which was closed for visitors and other residents, are hiding several requisites and activities, which could discredit the show, which performing on stage. To ensure higher social security, we need certain mystification. Once the barrier between stage and backstage is established, practically there is no way to go back in the authenticity. Described structure tendencies are valid also for tourist activity. Tourists want to know about life of the locals and even mix with them, but they are also pleased with some non-authentic experience (Maccannell, 1999, str.: 92-93).

Impact of tourism can be really positive and useful, but it can also be very negative and conducted with conflicts. Reasons for conflicts and stress are economic and social. In a lot of countries (for example Hawaii) mass tourism is the main economic activity, which ensures jobs and development. One of the conditions for that activity is involving local organizations and individuals into development of tourism. Mutual conflicts are negligible, when the life standard of destination is comparable to the life standard of guests. Where there are high economic differences and tourists are considered rich just because they can travel, it is common that serious disagreements arise. Problem can also be there, where local inhabitants are abandoning farming, because it is easier to work in tourism, and that is how it consequently causes shortage of local products. On the other side, tourism is frequently seasonable nature, so employees often stay jobless for a shorter or longer period. In the desire of attracting world hotel chains, foreign owners are arriving, which have their main goal for gaining highest profit, and most of all, employing foreign workers, so the local inhabitants are employed only for simple works. That is how the tourism becomes some form of imperialism and it is often developed in neocolonialism. Social distance between tourist and a local exists even for a fact, that a tourist is enjoying his free time and the host has to serve him (even if it is for money). Tourists are usually a blessing for the locals (increased money influx), but they can also become physical and social burden, if their number is too high (Horvat, 1999, str.: 110-111).

World Tourism Organization claims, that benefits from tourism to the local community are:

- Tourism is creating local workplaces and income, not only in the direct tourist companies, but also in farming, fishing, cottage industry, production.
- Tourism is decreasing migration of youth.
- Tourism is stimulating foundation of local tourism companies.
- With the help of new jobs and companies it leads to improvement of local life standard.
- If tourist companies are led by the locals, it is a high possibility that the profit will stay in the home destination.
- Improvement of tourism infrastructure (roads, schools ...) and waste management.
- Tourism workers are meeting with the new technology (computers), which can be also used in other economic activities.
- Tourism is encouraging development of new stores, recreational and cultural possibilities, which can be also used by locals.

Tourism sector is growing extremely fast, after a crisis fall in 2009, and it goes really well with crisis conditions. After 5 years of crisis, tourism improved that it is a part of the most persistent industry branches. Report about competition of world tourism (WEF) is connecting the fact with economic growth and creating new employments. Tourism is one of the main strategic solutions for developing problems in 21th Century, from employing youth to continual development.

Tourism is containing working in hotels, restaurants, tour agencies, airline companies, congress offices, funfairs, destination organizations, government and municipality works. Tourism is also including activities of banks, insurances, stores, marketing agencies, building and traffic sector.

Rush and uncontrolled development of tourism can also have some negative impacts:

- Increasing of traffic.
- Increasing of noise.
- Pollution and destroying vegetation.
- Pollution of drinkable water.
- Disturbing the animal kingdom.

5 Existing researches about the relationships to the tourists

Usually people are more inclined to development of tourism in the city centers, where the migration of people is already traditional, however, things on the countryside are quite different. Tourist arrivals on the countryside mean a fact that people in the area are not alone anymore, and they have to watch themselves for a behavior in front of the guests. There is much more traffic on the roads, the parking places are missing, several areas become more and more crowded, there is also no available tables in the local restaurants. That is the cause for often resistance of tourism in the traditional environments, especially senior citizens, which does not want new activities and changes, distractions of biorhythm, crowd and noise, but they want peace.

The research about tolerance of citizens in different European cities to foreigners was also carried out in Slovenia. According to the Euronews reporting, Ljubljana had excellent results, contrary to Athens, Rome and Valetta and Malta, which are still least kind destinations among European cities for foreigners.

There is an interesting article about subject: Relations of the residents in Slovenian alp tourist places to tourism and their impacts (Cigale, 2009). The purpose of the article was to find out, how the locals are feeling the positive and negative impacts of tourism in Slovenian Alpine region, and how the impacts perception affects on their relation to tourism and tourism development. The research was made in 5 different places, but it showed similar results. Everywhere is overwhelming positive relation to tourism. Most evaluated were economic impacts of tourism, as an employment options, tax effects, personal incomes, life standard and others. Some negative impacts are increasing the prices of properties and real estates, increasing different pressures, diminution of collaboration between people, extinct of local habits, increasing stress full life, changes is family life, increasing criminal actions, pollution, noise, waste, visual degradation of landscape and car pollution. In the conclusion author is finding out, that despite the fact that locals in general agree to positive impacts of tourism, can negative parts of tourist development for several citizens be very disturbing.

There are also interesting results about survey about environmental impacts of tourism in Slovenian tourism destinations, which was carried out inside the broad conceived research (Cigale et al., 2009:171), about environmental impacts of tourism and transport. Survey was made in the areas of Slovenian Alps, Koper costal region and in the area of Rogaška Slatina and Podčetrtek in years 2005 and 2006. First part of survey questionnaire was asking about the most disturbing environment pollution on the specific area, especially after that how and in what dimension does tourism and recreation influence on different environmental impacts in the specific tourist destination and its surroundings. Survey was performed among 3 groups: locals, tourists and the owners of vacation accommodation. Approximately two thirds of the respondents opinion was that influence of tourism on the quality of the local environment is positive, almost 20% answered that there is no influence, only 16,5% of the respondents think that influence is negative. No matter the general supremacy of the positive relation to tourism, there are interesting big differences between the individual areas. That is how the most of the respondents, who did mark impacts on tourism as positive, was defined in Podčetrtek (75%) and Rogaška Slatina (73,8%), and less in Portorož (53,2%) and Izola (57,5%). The biggest part of those, who mark negative impacts of tourism was in Portorož (25,5%) and Bohinj (23,8%). We can find reasons for that kind of result in the type of tourist offer, which is based on thermo mineral waters, what we can connect with specific characteristic of tourist population (seniors), which is with their actions less disturbing for the locals. Especially in a case of Podčetrtek, development of tourism has affected to finding new supplementary sorts of tourist offer, which means dispersed economic impacts of tourism into the wider circle of the locals. Podčetrtek is one of the best examples about collaboration of the health resort and surrounding providers, what is probably a consequence of the fact, that one of the founders of health resort is also non-profitable local tourist association. This action

affects on more positive valuation about tourism. There is a difference in coastal cities, where we are dealing with mostly typical mass tourism. A large number of tourists, which compete for their limited space and resources with the locals, are much more disturbing, especially in the summer time, when the tourism has its high season. Most disturbing influences are connected with traffic (crowded roads, problems with parking), even if on the several tourist areas most of the road traffic is reduced by the locals. As very important influence of tourism, the residents answered better tidiness of a destination.

6 Method

As the part of descriptive approach in our research we used a method of a description about the opinion of local residents on impact of arriving tourists in tourist vineyard cottages on the local environment and the method of a compilation discoveries, observations and results. In the activities of analytical approach we are going on the base about the results of questioning individual cases and conclusion about opinion of local inhabitants in the area of marketing the tourism product Tourism in vineyard cottages.

We gathered the information with the online survey, which was intended for local residents of the areas with developing Tourism in vineyard cottages. We have prepared questions with the grading scale of the Liker type, which also includes a neutral part: non-defined. There are 5 levels (I do not agree at all, I do not agree, non-defined, I agree, I completely agree). All the questions were analyzed, with the presentation of a conclusion at the end of the research.

The results were processed through different evaluation criteria. We were mostly interested in comparison of the results between those who are on any way connected with tourism in vineyard cottages and those, who do not have any connection with the tourism in vineyard cottages. We were also interested in comparing of the results assuming gender, age and education, and also if those who travel more have different relation to the guests of Tourism in vineyard cottages, as those who travel few or not at all.

7 Results

An example includes 110 respondents, from the areas of Tourism in vineyard cottages, who completed website survey, which was carried out on the February 2015. Besides the general questions, we were also interested where the respondents see positive and negative influences of guests, who arrive to the vineyard cottages. Providers of a product Tourism in vineyard cottages will try to direct their activities and adjust their offer in future, based on the results of this research.

Tourism in vineyard cottages has become very recognizable on the local and national level. Only 2% of the respondents answered, that they do not know any provider of Tourism in vineyard cottages, so we abandoned this information and we did not include it into our

analysis. Because of the online (web) questionnaire, the numbers of the answers on some questions are variable for 4 units. Every answer was analyzed by the actual number of answers.

In the next part we are presenting the results of this research.

7.1 What is your connection with tourists in vineyard cottages?

Table 1. Connection with tourists in vineyard cottages

Answers	Frequency	Percentage
1 I am renting a vineyard cottage (the owner)	37	32%
2 I am tourist provider of tourist activities	19	17%
3 I have no business connections, with tourists, who come to the vineyard cottages.	58	51%
Total	114	100%

Those who are renting the vineyard cottages or they are tourist providers, are going to be united in our analysis in one category (56 persons) and the second category is including others, who do not have connections with tourists in vineyard cottages (58 persons).

7.2 How often do you go on a trip, travel or vacation?

Table 2. Frequency of trip, travel or vacation

Answers	Frequency	Percentage
1 More than three times a year	61	54%
2 Two times a year	37	33%
3 One time a year	15	13%
4 Never	0	0%
Total	113	100%

Interesting fact is, that more than a half of respondents go for a trip, travel or vacation more than three times a year, two thirds twice a year and only 13% just once. There is no respondent, who would not go a least once a year for a trip, travel or vacation. Those, who travel more are mostly not the owners of vineyard cottages and they do not have catering business. Reasons for that are probably because the owners are too busy to have vacation. Considering achieved formal education, people with university education travel most. Considering age structure, respondents above 61 years of age travel more (71% more than 3 times a year), than respondents between 41 and 60 years of age (56% more than 3 times a year), those who travel less are up to 40 years old (44% more than 3 times a year). We included these questions in our survey, because we were interested if people who travel more have different aspects for arrivals of tourists as those, who travel less.

7.3 Tourists who come to the vineyard cottages are disturbing for the environment and local inhabitants.

Table 3. Disturbing for the environment and local inhabitants

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
70 (62%)	37 (33%)	3 (3%)	1 (1%)	1 (1%)	112 (100%)

Enlightening information is that 95% of locals think that tourists who come to the vineyard cottages are not disturbing for the environment and local community, 3% of the respondents are non-defined, only 2% thinks, that they are disturbing. For the respondents up to 40. years of age, the tourists are not disturbing at all.

The result of the survey confirms a fact, that in Dolenjska region people are gratified for having tourists. This fact is also confirmed in the books of reviews, where guests expose high hospitality level of locals.

There is a difference in some tourist areas, where are, most likely because of the large number of tourists, more reserved or also deniable for tourism. Tourists in vineyard cottages contribute to recognition of destination and region, 2% were non-defined and 2% is not agreeing with the fact. The owners of vineyard cottages and tourist providers believe more than others, that tourists contribute to recognition of the region and entire Slovenia, because it is unique kind of tourist accommodation.

7.4 Tourists in vineyard cottages contribute to recognition of the destination and also recognition of region.

Table 4. Contribution to recognition of the destination and the region

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
0 (0%)	2 (2%)	2 (2%)	35 (31%)	72 (65%)	111 (100%)

96% of the respondents think that tourists in vineyard cottages contribute to the recognition of the destination and region, 2% of the respondents is non-defines and only 2% of them disagree with the fact. The owners of vineyard cottages and tourist providers more than others believe into the recognition of a destination by increasing the arrivals of tourists. We believe that tourists, who come to vineyard cottages, contribute to recognition of a destination, region and also Slovenia, because it is a matter of unique kind of accommodation.

7.5 With the arrival of tourists the concern of cleanliness and tidiness of a destination will increase.

Table 5. The concern of cleanliness and tidiness of a destination

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
1 (1%)	2 (2%)	7 (6%)	65 (59%)	35 (32%)	110 (100%)

More than 90% of respondents think, that with tourist arrivals in vineyard cottages the concern for cleanliness and tidiness will increase, 6% are non-defined, only 3% are disagreeing. These are mostly the respondents above 61 years of age.

We are estimating that wine regions are already clean and tidy at the moment, what is also an inspiration for the guests, which come to vineyard cottages. Increasing arrivals of tourists and increased number of hikers make locals to have more attention to establish and provide clean and tidy environment.

7.6 Tourists in vineyard cottages bring economic benefits to the individuals.

Table 6. Economic benefits to the individuals

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
0 (0%)	10 (9%)	7 (6%)	59 (53%)	36 (32%)	112 (100%)

85% of respondents think, that tourists in vineyard cottages bring economic benefits to the individuals, 6% is non-defined, 9% of them think, that tourists in vineyard cottages do not bring any economic benefits to the individuals. The owners of vineyard cottages believe more in positive economic benefits, which are brought by tourists. This fact is less confirmed from people with primary or middle-school education and inhabitants between 41 and 60 years of age, and most from the respondents till the age of 40. It is an interesting fact that the most agreeing answers were by the respondents, who travel more.

Tourists bring economic benefits to the individuals, which depends on the occupation of specific vineyard cottage. There are some cottages, which are busy for more than three months, more than two months or more than a month. Their owners already carry good economic benefits. As well as some tourism providers, which are very well visited because of growth of tourism, especially in local restaurants and bars, which are often visited by guests who stay in vineyard cottages. Tourists in vineyard cottages bring economic benefits to the local community

7.7 Tourists in vineyard cottages bring economic benefits to the complete local community.

Table 7. Economic benefits to the local community

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
1 (1%)	1 (1%)	9 (8%)	57 (52%)	42 (38%)	110 (100%)

90% of the respondents think, that tourists in vineyard cottages bring economic benefits to the local community, 8% is non-defined, only 2% disagree. The owners of vineyard cottages believe more in positive economic benefits, which are brought by tourists. Most of the respondents who completely agree are up to 40 years of age. Those who disagree are traveling really few. We believe that from arrival of tourists benefits come also to the whole local community, sellers, gastronomy sector, museums, galleries, providers of sport activities, supplementary activities on the farms, municipalities by paying tourist taxes and others.

7.8 Tourists in vineyard cottages are going to contribute for preventing abandoning and overgrowing wine-growing areas.

Table 8. Contribution for preventing abandoning and overgrowing wine-growing areas

Answers					
I do not agree	I do not agree at all	Non-defined	I agree	I completely agree	Total
1 (1%)	4 (4%)	23 (21%)	54 (49%)	28 (25%)	110 (100%)

Three quarters of the respondents have opinion that tourists, who come to the vineyard cottages, are going to help, that the wine growing areas will not be abandoned and overgrowing. 20% of the respondents think, that the tourists will not have special influence on the case, only 5% of them think, that tourists will not help wine growing areas. That wine growing areas will not be abandoned so much is believed more by women and inhabitants from the age 41 to 60.

Because of the higher taxes and administrative problems more and more people are abandoning their vineyards and they become overgrown. An excitement of youth for working in vineyards and in the sector of wine-growing and wine-making is not present anymore, because it demands a lot of professional knowledge, time, will and belongings. Wine making and maintaining vineyard cottages is also connected with high costs. That is why tourism in vineyard cottages can also be an ideal opportunity for the owners, which can include into integral tourist products with their vineyard cottages and into active system of marketing, so it can bring positive and extra economic impacts.

7.9 Tourists in vineyard cottages are enabling selling surplus goods, wine and other local products.

Table 9. Selling surplus goods, wine and local products

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
1 (1%)	2 (2%)	15 (13%)	61 (55%)	32 (29%)	111 (100%)

84% of respondents think, that the tourists in vineyard cottages will enable selling of surplus goods, wine and other local products, 13% of them is non-defined, only 3% disagree. Into the selling of surplus goods believe more women than man. This fact is mostly believed by people with primary or middle school education, less with higher and university education. Guests who come to the vineyard cottages are presenting an opportunity for selling surplus goods, especially wine, dried meat products, honey, brandies, homemade bread, dried fruits and handmade products.

We are finding out, that there is a lot of law problems in this sector, because the owners must, if they want to sell their own products, complete a lot of the rules, standards and certificates. With the simplicity of this law, we would make a great step to the preserving a tradition and quality of local food, and for the locals this would present important extra source of income, which would cause the increasing of the locals being more attached to the tourists.

7.10 Tourists in vineyard cottages are going to enable new business opportunities for youth.

Table 10. New business opportunities for youth

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
1 (1%)	2 (2%)	17 (15%)	63 (57%)	27 (25%)	110 (100%)

82% of the respondents opinion is that tourism in vineyard cottages also means new business opportunity for youth, 15% of them is non-defined, only 3% disagree. Mostly the owners of the vineyard cottages and tourist providers believe that tourists in vineyard cottages present new business opportunities. Women believe more into the opportunities for youth as men. This forecast is less believed by the residents with primary or middle school education and the respondents between 41 and 60 years of age.

We are evaluating that tourism product Tourism in vineyard cottages is very perspective. The product is now on the beginning of its development, but we believe, that in few years, maybe a decade, it will become one of the most recognizable tourism products of Dolenjska region and also Slovenia. With the increase of visiting vineyard cottages new different opportunities for youth will definitely arise, as well as approaching other forms of tourism.

7.11 Tourists in vineyard cottages will influence on increasing waste in the destination.

Table 11. Influence on increasing waste in the destination

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
9 (8%)	30 (27%)	36 (33%)	32 (29%)	3 (3%)	110 (100%)

One third of the respondents think that arrivals of tourists in vineyard cottages will not cause increasing of waste in town, one third is non-defined and one third is assuming that arrivals of tourists will also bring more waste into environment. Increasing waste because of the arrivals of tourists is agreed also by the owners of vineyard cottages and tourist providers and university educated respondents. Less danger is seen by the respondents below 40 years of age.

Increased arrivals of tourists also mean increased amount of waste, and it is also a challenge for countryside area, which is still poorly covered with the system of recycling waste. Tourists, who come to the vineyard cottages, usually warn the owners about the problem of recycling.

7.12 Tourists in vineyard cottages will influence on the increase of noise in the destination.

Table 12. Influence on the increase of noise in the destination

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
23 (21%)	51 (46%)	24 (22%)	10 (9%)	2 (2%)	110 (100%)

67% of respondents confirmed the fact, that tourists in vineyard cottages do not influence on increasing noise in destination, 22% is non-defined, 11% of them thinks, that arrival of tourists also mean increase of noise in the destination. Tourist providers and the owners of the vineyard cottages are not considered about increase of noise as much as the others. Those with the university education see more threats in increasing the noise. Less danger is seen by respondents below 40 years of age.

From our findings so far, we can claim that tourists in vineyard cottages definitely do not affect on increasing noise in wine growing areas. In the evening, when they are in their vineyard cottages are quite and calm, but during the day they explore the region or Slovenia. There are plenty of meetings mostly on weekends, including locals organizing celebrations over the vineyard cottages, which usually perform by playing accordion and singing. But this is not a disturbance for tourists; on the contrary, it is a pleasure, as well as the local events, which they love to participate.

7.13 Tourists in vineyard cottages will influence on increase of criminal.

Table 13. Influence on increase of criminal

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
46 (42%)	54 (50%)	7 (6%)	1 (1%)	1 (1%)	109 (100%)

92% of the respondents is an opinion, that arrival of tourists in vineyard cottages is not going to influence to increase of criminal, 6% is non-defined, only 2% think that the arrival of tourists is going to influence on increasing criminal, most of those is above 61 years of age.

We think, that guests in vineyard cottages mean reduction of criminal, and not increasing it. In some wine-growing areas are occasionally appearing some brake-ins into the vineyard cottages, but only into those, which are not occupied. Company Kompas Novo mesto did not mark not even one criminal activity connected to Tourism in vineyard cottages until now.

7.14 Tourists in vineyard cottages will influence on the losing of tradition in wine-growing areas.

Table 14. Influence on the losing of traditional in wine-growing areas

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
49 (44%)	47 (43%)	8 (7%)	5 (5%)	1 (1%)	110 (100%)

87% of the respondents think, that arrival of tourists into the vineyard cottages is not going to influence on losing the tradition in wine regions, 7% of the respondents is non-defined, 6% of them agreed, that tourists in vineyard cottages are going to influence on the tradition in wine regions. The owners of the vineyard cottages and tourist providers are not afraid as much as the others about losing a tradition. Respondents with the university education see less danger in losing a tradition, than less educated, the respondents above 61 years of age see here more danger, than younger.

We believe that the tourist, who arrive to the vineyard cottages are not presenting a threat for losing tradition. Bigger threat is shortage of time, overworking, and commercialization of the goods and consumerism.

7.15 Tourists in vineyard cottages will influence on increasing alcoholism in the destination.

Table 15. Influence on increasing alcoholism in the destination

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
55 (51%)	45 (42%)	6 (5%)	1 (1%)	1 (1%)	108 (100%)

93% of respondents think, that tourists in vineyard cottages are not going to influence to increase of alcoholism in destination, 5% of residents is non-defined, only 2% of them think, that the tourists in the vineyard cottages will approve to the increase of alcoholism in destination.

The results are even more encouraging and optimistic, because of the opponents at the beginning of the project Tourism in vineyard cottages. They presented themselves a product, which will mostly contain organizing tours from cottage to cottage and drinking. So we did take a lot of attention for correcting those wrong perceptions and on all the presentations, web sites, folders and performances emphasized, that it is not about drinking, but that it is about making a special, worldwide unique product form of accommodation, which is very attractive, environment-friendly and it has all the elements of continual and socially responsible development of tourism.

7.16 Tourists in vineyard cottages are going to influence on the building up the wine-growing areas.

Table 16. Influence on the building up the wine-growing areas

Answers					
I do not agree at all	I do not agree	Non-defined	I agree	I completely agree	Total
25 (23%)	39 (37%)	30 (28%)	10 (9%)	3 (3%)	107 (100%)

60% of the respondents think that tourism in vineyard cottages is not going to influence to the building up in the wine-growing areas, 28% is non-defined, and 12% thinks, that Tourism in vineyard cottages will affect to the building in the wine-growing areas.

The owners of vineyard cottages and tourist providers think, that Tourism in vineyard cottages will not affect on building up the wine-growing areas.

We evaluate, that Tourism in vineyard cottages will not have high impact on building up the wine-growing areas, but it is an excellent opportunity, that the legalization of existing vineyard cottages is finally solved. In the wine-growing region Posavje there is about 15.000 vineyard cottages. Many of them do not have proper documentation. Some of them are built completely without license, and there are many cases, that the owners had building license, but they did not respect it, so they expanded their objects for about 10%. Probably this huge

mass of objects will not be demolished, so it would be really useful, if the government would enable as much simple and favorably price for legalization of this objects, of course only for those, who did not affect too much in the local environment. With this solution, we would finally manage reports, gain property taxes, and enable the owners to participate in the offer of Tourism in vineyard cottages. That step would mean gaining high number of new accommodations without new spatial intervention, and without high finance investment. The owners will enable marketing, local tourist providers will bring new guests, municipality increased income of tourist tax and the country new taxes income, which can lead to the story about success.

In the survey participated 64 men (58%) and 46 women (42%).

Age of the respondents:

- Below 40 years of age: 36 persons (33%).
- 46-60 years of age: 57 persons (52%).
- 61 years of age and above: 17 persons (15%).

Level of education of the respondents:

- Primary and middle school education: 36 persons (33%).
- Post-secondary and college education: 39 persons (35%).
- University education: 35 persons (32%).

7 Discussion

A pattern, which we gathered in our survey is:

- Approximately half of the respondents are the owners of vineyard cottages or other tourist providers, and half of them do not have any connection to the tourism in vineyard cottages.
- 54% of the respondents goes to a trip or a vacation more than three times a year, approximately one third two times a year, and 13% one time a year.
- Age structure for the 50% of the respondents is from 41 to 61 years of age, one third is in the age below 40 years, and 15% of the respondents are above 61 years of age.
- Considering level of education, we notice that education structure is very balanced: one third of the respondents have achieved primary or middle school education, one third post-secondary and college education and one third university education. We would probably gather more respondents with the primary and middle school education, if we would not take online survey. There is also a fact, that most of the owners of vineyard cottages have higher standard and higher level of education or that among the owners of vineyard cottages there is very few working country people.

For the 95% of the respondents, tourists who come to the vineyard cottages are not disturbing for the local environment and the local inhabitants. On the contrary, extremely high percentage, more than 90% of the respondents are evaluating, that the guests, who come to the

vineyard cottages have very positive influence to the local environment. Only 2% of the respondents are disturbed by tourists, who come to the wine-growing areas.

From all the facts, the higher percentage of agreement is in that tourists in vineyard cottages will contribute to better cleanliness and tidiness of destination. As much as many respondents (90%) think, that tourists in vineyard cottages will bring economic impacts to the whole local community. There is an interesting fact that the respondents believe less in bringing economic benefits also to the individuals by the arrival of tourists (85%).

There is very high percentage of those, who think, that tourists in vineyard cottages are not going to impact on the increasing criminal (92%) and increasing alcoholism in the local environment (93%), which means, that the respondents are well informed about the product, with the main purpose for providing unique tourist accommodation, with the wine only as a part of accompanying product. The enquiry about vineyard cottages is also by guests, who do not drink alcohol, but they want to enjoy intact nature and different activities in a region as hiking, cycling, riding horses, boating, swimming, playing tennis, golf and others. Even on the criminal appearing the tourists have more positive than negative impact, because the break-ins usually happen into empty vineyard cottages, criminal actions connected with the tourism in vineyard cottages were not recorded until now.

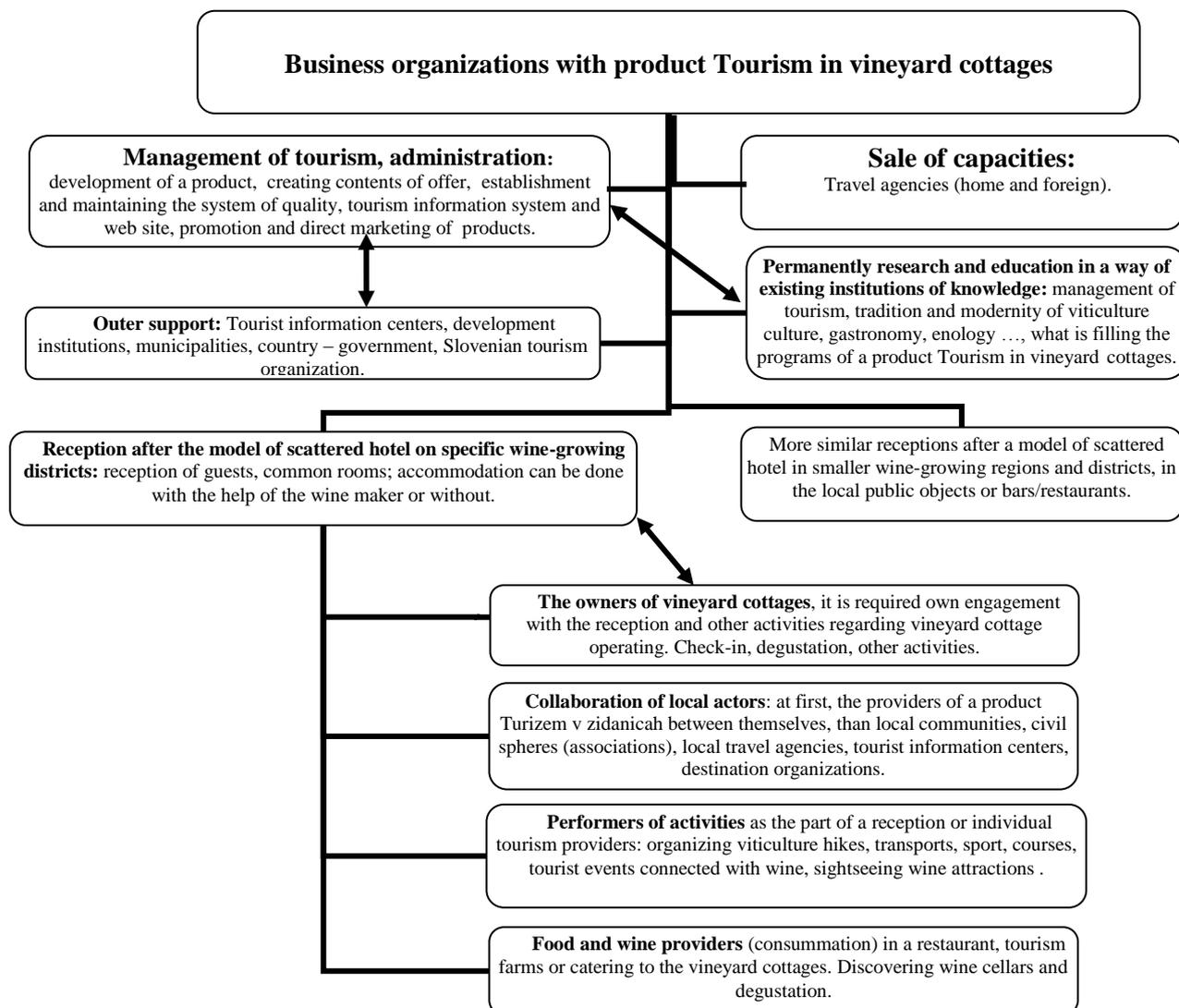
High percentage of the respondents (84%) believes, that tourists in vineyard cottages will influence to the selling of surplus goods and that they will enable new business opportunities for youth (82%). Three quarters of the respondents is agreed with a fact that the tourists in vineyard cottages will aid into the abandoning and overgrowing the wine-growing areas.

Most of the respondents think (87%), that tourists in vineyard cottages will not impact on disappearing the tradition in the wine regions, 60% of the respondents think that because of the tourism in vineyard cottages will not increase building up the wine-growing areas, but here is a lot of non-defined respondents, so the percentage of those, who think that tourism in vineyard cottages will increase building up wine-growing areas is actually only 12%.

In the matter of increasing noise the respondents also do not see special threat (only 11%). The most negative matter, which is agreed by most of the respondents, is increasing waste. This threat is agreed by two thirds of the respondents.

Considering the results of the research, individual interviews with guests in the area of product Tourism in vineyard cottages and responses in the local environment, we evaluate, that the product has unique, authentic, original and attractive approach with all the possibilities, that it becomes one of the most recognizable, wanted and paraded integral product of Slovenian tourism. It is necessary, that also other owners of the vineyard cottages, who are not included into the product Tourism in vineyard cottages yet, manage their capacities and infrastructure and include into a model of organizing Tourism in vineyard cottages – economically organization, which is dealing with planning, development, organization, implementation, promotion and marketing.

In the next part we are presenting a model of development unique product Tourism in vineyard cottages:



Model: Development of a unique product Tourism in vineyard cottages, summarized and adapted by the Center for Entrepreneurship and Tourism Krško (Colarič-Jakše et al., 2010).

8 Conclusion

Tourism is one of the fastest growing activities from the economic aspect. Approximately 7 billion people are travelling today and tourism is creating 1/10 of gross domestic product. Development of tourism is also bringing social, cultural and environmental benefits, so that is why also in the times of lowered economic growth is one of the business opportunities for countries, regions, local communities and companies. Travel has become a part of people's lifestyle and quality of life.

Tourism in vineyard cottages is a travel and temporary accommodation for guests in vineyard cottages in a place, where wine-making and viticulture has rich and diverse heritage, with the purpose of enjoying wine, local culinary delights and the specialties of social and nature environment, what is ensured by accommodation in vineyard cottages. Tourism in vineyard cottages is primary tourist product, which ensures accommodation or stay in viticulture landscape and it is connected on all other secondary tourist products on a destination (Colarič-Jakše et al., 2010).

New, innovative, attractive, unique and authentic product Tourism in vineyard cottages, which is developed in the wine-growing region Posavje, it has an extremely great potential, because it is one of the most recognizable forms of tourism in the countryside areas, and it has extra perspective with the creating local stories and connecting into the integral tourism products. In the times of modern tourists, who are more conscious and informed by an offer in a destination, wanting to experience this unique adventures and emotional connections with the contents of a product and people who offer this product, grow and sell in their natural environment, greenery, peace, personal approach and hospitality. Vineyard cottages, which are part of the stationary offer, are also starting points to discover and experience tourist offer in the environment and other contents in the destination.

On that way it is increasing recognition and image of the tourist area, which can consequently mean a positive influence to the satisfaction and pride of the local inhabitants. Considering perception of guests who come to vineyard cottages we can expect, that development of the attractive product in nature environment is going to continue after the worked-out concept and it is going to become a stimulator for developing integral tourist products and wanted tourist attraction for tourists.

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Ljubljana as a ‘Green’ and Sustainable city– Comparing and Contrasting Various Practices

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Abstract

Purpose and Originality: ‘Greenness’ and sustainability are moving from an abstract concept toward a measurable state, using the triple bottom line approach considering environmental, social, and economic dimensions. How the ‘greenness’ and sustainability of Ljubljana, the capital of Slovenia, are achieved and estimated, is determined by comparing two indices. European Green Capital Award represents its ‘greenness’, while its sustainability is analysed by A New Sustainability City Index Based on Intellectual Capital Approach. Originality of the research is the analysis of the potential of Ljubljana city through contrasting these two indices.

Method: Quantitative and qualitative methods were used. Two comparable indices have been chosen as a multidimensional concept which both clearly involve economic, environmental (ecological) and social aspects, with available and published results for Ljubljana. Both indices are comparable, the category scores were aggregated according to equal weighting, and the index results were expressed as percentages.

Results: The results showed that ranking of Ljubljana as a ‘green’ and sustainable city respectively is different. Total index score of 52 % for European Green Capital Award places Ljubljana 22nd among the ‘green’ cities of Europe and ranks it in the upper half of the 58 European cities in the study. A New Sustainability City Index Based on Intellectual Capital Approach x of 44.92 ranking Ljubljana on the 102nd position in a scale of 158 European cities, places it in the lower half. The results confirm that Ljubljana is more ‘green’ than sustainable, according to these studies.

Society: There are many studies, which make a concerted effort toward capturing the ‘greenness’ and the sustainability of cities. Therefore, indices include three independent dimensions and are decisive in positioning the city. These are important tools in making environmental (ecological), social-cultural, and economic decisions in cities’ policy, which directly affect companies, management and society.

Limitations / further research: The main research limitation of this proposal is unavailability of complete database for both indices. Further research is more than needed, with the most recent available data.

Keywords: ‘green’ city, sustainable city, ‘green’ indicators, indicators of sustainability, European Green City Award, A New Sustainability City Index Based on Intellectual Capital Approach, Ljubljana.

1 Introduction

Sustainability is one of the most important global challenges and the greatest challenge for the future development of the cities. According to United Nations reports 54 percent of the world’s population lives in urban areas; by 2050, two-thirds of its population are likely to be urban. This dominance of cities highlights the significant role of urban sustainable development. Although the population projection for Slovenia up to 2050 does not show substantial changes, one of the aims is to achieve sustainability. Ljubljana was awarded the title of the European Green Capital last year; in this respect it is leading the way in environmentally friendly urban living.

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In literature, there are several definitions of the terms '*green*' city and *sustainable city*. We attempt to analyse indices divided into categories and indicators to review which of the three dimensions play an important role when evaluating the degree of 'greenness' and sustainability of Ljubljana. The analysis of literature indicates that the 'green' city concept has a multidimensional meaning; it takes responsible societal and political action in order to meet the conditions of environmental quality.

Currently, the 'green' city concept is defined as an extension of sustainable development in the urban context (Lewis, 2015, p. 1) and it represents the architectural model of the future, where urban structures are compatible with the environment and life quality (ELCA, 2011, p. 4).

Sustainability is defined in the context of economic, social, environmental issues and it is in this focus a sustainable city is attempted to be defined. However, there is no completely agreed upon definition for what a sustainable city should be or completely agreed upon paradigm for what components should be included. Generally, developmental experts agree that a sustainable city should meet the needs of the present without sacrificing the ability of future generations to meet their own needs, analogous to the definition of sustainable development by World Commission on Environment and Development. One of the definitions of a sustainable city: *A city constructed or landscaped in such a way as to minimize environmental degradation, with facilities (such as transport, waste management, etc.) which are designed so as to limit their impact on the natural environment, while providing the infrastructure needed for its inhabitants* (Oxford Living Dictionaries).

How the 'greenness' and sustainability of Ljubljana, the Slovenian capital, is achieved and estimated, is determined by contrasting different practices and using various sustainable and 'green' indicators. This paper presents an overview of the relevant studies of measuring 'greenness' and sustainability of Ljubljana, where results are published and available.

Therefore, to measure and evaluate city 'greenness' and city sustainability sets of indicators, frameworks and assessment tools have been developed. In this paper it is exposed how 'green' and sustainable indicators and their appropriate selection play undoubtedly an important role in attainment of both 'greenness' and urban sustainability. This paper examines different practises in order to determine the 'greenness' and sustainability of Ljubljana. Discussions based on the comparative analysis are categorized in three dimensions: environmental (ecological), social (cultural) and economic.

'Environmental' and 'ecological' are not synonymous and has different conceptual meanings and overlaps with the concept of 'nature'. "Environment includes three very different sorts of the word environment: the physical world, the social world of human relations and the built world of human creation" (Grange in Klesse, 2001, p. 62). "By ecology we mean the whole science of the relations of the organism to the environment, including, in the broad sense, all the 'conditions of existence'" (Haeckel, translated in Stauffer, 1957, p. 140).

There are major subsets of environmental indicators, one the subset is the collection of ecological indicators. From this viewpoint environmental and ecological indicators are compatible and comparable.

The purpose of this paper is to discuss conceptual requirements for ‘greenness’ and sustainable indices by using the European Green City Award (EGCA) and A New Sustainable City Index Based on Intellectual Capital Approach (SCI) to analyse the differences and results. The aim of this study is to critically examine and contrast different ‘greenness’ and sustainable urbanization practices and analyse the position of the city of Ljubljana in the ‘green’ and sustainable framework of European cities.

2 Theoretical framework

There are many studies, which make an effort toward capturing the ‘greenness’ and sustainability of cities. A comprehensive literature review was conducted to obtain the information needed for pursuing the objectives of this research. Information was obtained from the Web of Science literature and academic journals. In this section, we outline the ‘greenness’ and sustainability indices for Ljubljana, regarding studies for which results are published and accessible. Two comparable studies – the SCI and the EGCA - have been chosen as a multidimensional concept which clearly involves economic, environmental (ecological) and social aspects. Results of each of these two studies are comparable, the category scores were aggregated according to equal weighting, and the index results were expressed as percentages.

Analysing the potential of Ljubljana in the ‘greenness’ and sustainability framework we believe that all three essential aspects of the SCI and the EGCA equally contribute to the final index result although different indicators are used to create each index.

We can assume that ranking of Ljubljana’s degree of ‘greenness’ and sustainability is in the higher half of the European cities which are estimated in these two studies. In relative ranking, we suppose that Ljubljana is more ‘green’ than sustainable.

3 Method

The research required to use the analysis of scientific studies, papers and reports about the given issue. The methodological process also consists of collecting the various studies and analyses of ‘greenness’ and sustainability performances of Ljubljana city. The comparative method helped to indicate and recognize differences between indices as well as similarities. The mixed research method applied in this paper uses a quantitative and qualitative approach.

3.1 European Green Capital Award

The growing need for urban sustainability monitoring has resulted in elaborate overviews of the economic, environmental and social performance of EU member states and the EU as a whole. The European Green Capital Award (EGCA) is the process leading to the yearly

selected award which was launched in 2008 by European Commission DG Environment after an initiate of 15 European cities in Tallinn, Estonia in 2006 (Zoeteman, Slabbekoon, Mommaas, Dagevos, Smeets, 2014, p. 8). For selection of the cities, 19 sustainability themes, called stocks, with related sustainability requirements have been included for the 3 P's, called 3 capitals. The per cent achievement scores of individual indicators are summarized for each stock and the total of stock scores determines subsequently the capital score. The mean of the 3 capital-scores finally determines the total sustainability score of a city which varies in principle between 0 and 100% (Zoeteman, Slabbekoon, Mommaas, Dagevos, Smeets, 2014, p. 13-14).

The method applied is based on the experience of Telos since 2000 by monitoring sustainability of Dutch municipalities and provinces. Although it applies a detailed assessment of the three sustainability pillars: the ecological capital, the economic capital and the socio-cultural capital, it does not include governance aspects. Each of these three sustainability 'capitals' is composed of 5-7 sustainability themes, while each of those is based on some 4 indicators. The score for each indicator could vary between 0 and 100% reaching the sustainability goal. Indicator values were added to a theme score by giving them in principal equal weight, and the same was done for the themes to arrive at a capital score and for the three capitals to obtain the overall sustainability score of a municipality. (Zoeteman, van der Zande, Smeets, 2015, p. 68-69).

The results of the EGCA about total sustainability score and scores for each three pillars of sustainability from monitoring of 58 EU cities are in table 1.

Table 1. The European Green City Award (EGCA)

Town (Europe)	EGCA Total sustainability score (0-100 %)	Rank	Ecological pillar	Socio-cultural pillar	Economic pillar
Munich	62	1-2	54	69	63
Stockholm	62	1-2	58	70	59
Ljubljana	52	22	56	54	47
Thessaloniki	33	1	38	29	31

Adapted from: *Integrated Sustainability Monitoring of 58 EU-Cities*. A study of European Green Capital Award applicant cities (p. 25-26), In Zoeteman, van der Zande, Smeets, 2015, Tilburg: Telos.

3.2 Sustainable City Index (SCI) based on Intellectual Capital Approach

The following are components that constructed an indicator for each of the dimensions considered in the SCI. The environmental dimension (ED) reflects four components: pollution; water consumption; waste management and land uses, each measured by a set of indicators. The economic dimension (EcD) has been measured using the Gross Domestic Product (GDP) and the labour market indicators. Finally, the social dimension (SD) has been disaggregated into four components: health; safety; education; and culture conditions, each measured by a set of indicators. The cities and indicators used have been selected based on the literature review developed and the data available in the Urban Audit database from Eurostat. The different dimensions consider in their construction two kinds of scales of indicators:

absolute, normalized in per capita terms; and efficiency, on a percentage scale. To normalize, when the indicator does not have a percentage scale, variables have been rescaled assigning 100 to the highest value and 0 to the lowest. Thus, all the variables generated by the indicators have values ranging from 0 to 100 (minimum to maximum). The structure of the indicator SCI is supported in a multiplicative scheme, according to Equation, from Intellectual Capital theory and provides a robust indicator for each component. This method allows for comparison between cities; the addition of new indicators; analyses the capitals capable of obtaining future profits, and provides an interesting objective to make new political decisions. The weighting and aggregation scheme used is based on an objective method (PCA), using the percentage of variance retained by each component and the characteristic vectors, respectively (Alfaro-Navarro, López-Ruiz, Nevado Pena, 2017, p. 5-7).

Sustainable City Index for each component is shown in table 2.

Table 2. The Sustainability City Index (SCI) by Dimensions

Town (Europe)	SCI	Rank	ED	EcD	SD
Aarhus	54.31	1	61.22	46.05	55.84
Ljubljana	44.92	102	35.69	42.03	52.35
Porto	40.08	158	34.33	40.55	34.15

Adapted from: “A New Sustainability City Index Based on Intellectual Capital Approach” by Alfaro-Navarro, López-Ruiz, Nevado Pena, 2017, *Sustainability*, 9(5), p. 6.

3.3 Dimensions of ‘greenness’ and sustainability of Ljubljana

The comparison of categories and indicators of the EGCA and the SCI of Ljubljana and scores of each category are shown in table 3.

The categories presented in both the tools of ecological / environmental aspect are: air (pollution), water, waste, land use and green areas. In the EGCA the category of energy (& climate) measures GHG and CO₂ emissions, and estimates emission reduction target 2010-2010. Apparently, the SCI in the category of pollution defines ‘energy consumption of buildings’.

The social-cultural aspect in the EGCA and the SCI is focused on categories: health, education, (art) culture and safety. Moreover, the EGCA includes additional two categories – ‘economic, political and social participation’ and ‘residential (living) environment’.

The economic dimension in the EGCA and the SCI represents ‘labour’ (market) and ‘GDP’; for the SCI there are an additional indicators; ‘capital goods’, ‘infrastructure & mobility (accessibility)’ and ‘knowledge’.

Table 3. Categories (stocks) and indicators of the EGCA and the SCI of Ljubljana

The EGCA of Ljubljana		The SCI of Ljubljana	
56 %	Ecological capital	35.69	Environmental Dimension(ED)

Soil & ground water:

1. Chemical status groundwater
2. Nitrogen input on soil

Drinking water and sanitation:

3. Public water supply consumption
4. Household consumption
5. People connected to secondary or better wastewater treatment

Surface water:

6. Soil Sealing
7. Ecological status surface water
8. Chemical status surface water
9. Increasing flood risks due to heavy rain

Air:

10. Concentration NOX
11. Concentration O₃
12. Concentration PM10
13. Concentration PM 2.5
14. Annual emissions per capita of NO_x
15. Annual emissions per capita of VOC
16. Annual emissions per capita of PM 2.5
17. Perception of seriousness' of air pollution

Nuisance (annoyance) & emergencies (calamities):

18. Road noise (Lden) >55dB
19. Road noise (Lden) >65dB
20. Rail noise (Lden) >55dB
21. Rail noise (Lden) >65dB
22. Airport noise (Lden) >55dB
23. Airport noise (Lden) >65dB
24. Perception noise annoyance

Nature & landscape:

25. Urban green areas
26. Urban blue areas
27. Forest
28. Urban sprawl
29. Biodiversity

Energy & climate:

30. Annual total and traffic GHG emissions
31. CO₂ eq. emissions per capita
32. Emission reduction target 2010-2020

Resources & waste:

33. Annual municipal solid waste generated per capita
 34. Landfilling
 35. Incineration
-

Pollution:

1. Rainfall
2. Index of Summer Smog
3. Hours per year that NO₂ exceed 200 mcg/m³
4. Days particulate matter PM10 exceed 50 mg/m³
5. Accumulated ozone in excess 70 mcg/m³
6. Annual average concentration of NO₂
7. Annual average concentration of PM10
8. Energy consumption of buildings

Water consumption:

9. Total consumption of water
10. Price of a m³ of water

Wastes and recycling:

11. Annual amount of solid waste
12. Annual amount of solid waste recycled

Land uses:

13. Total land area
14. Green space area
15. Land used for agricultural purpose
16. Commercial activities
17. Land area in residential use

54 %	Social-cultural capital	52.35	Social Dimension (SD)
	Economic, political, social participation:		Health:
	36. Long term unemployment rate		18. Number of live births
	37. At-risk-of-poverty rate		19. Number of deaths per year
	38. Turnout municipal elections		20. Number of hospital beds
	39. Turnout national elections		Safety:
	40. Turnout European elections		21. Number of deaths per year due to suicide
	41. Political trust		22. Murders and violent deaths
	42. Perception foreigners are good for society		23. Car thefts
	43. Perception everyone can be trusted		24. Domestic burglary and deaths
	Health:		25. Road accidents
	44. Mortality rate		Education:
	45. Hospital beds		26. Number of residents (aged 15–64) with ISCED level as the highest level of education: A (0, 1 or 2)
	46. Availability General Practitioners		27. Number of residents (aged 15–64) with ISCED level as the highest level of education: B (3 or 4)
	47. Life expectancy		28. Number of residents (aged 15–64) with ISCED level as the highest level of education: C (5 or 6)
	48. Satisfaction with Doctors		
	49. Satisfaction with Hospitals		Culture:
	Art and culture:		29. Number of cinema seats
	50. Museum visitors		30. Number of museums
	51. Theatres		31. Number of theatre seats
	Safety:		32. Number of public libraries
	52. Homicide		
	53. Burglary		
	54. Fatalities traffic		
	55. Perception of safety		
	Residential (living) environment:		
	56. Net migration		
	57. Rental price		
	58. Satisfaction with living in this city		
	59. Satisfaction with easy of finding good house for reasonable price		
	60. Satisfaction with sport facilities		
	Education:		
	61. Youth unemployment		
	62. Early leavers from education		
	63. Secondary education		
	64. Satisfaction with schools		
47 %	Economic capital	42.03	Economic Dimension (EcD)
	Labour:		Labour market:
	65. Employment rate		33. Total economically active population
	66. Unemployment rate		34. Unemployed
	67. Employment function		35. Employment
	68. Aging labour force		36. Self-employment
	Economic structure:		37. Paid employment
	69. Disposable income		38. Full-time employment
	70. Birth of businesses		39. Part-time employment
	71. Death of businesses		GDP:
	72. GDP/capita PPS		

73. Employment growth	40. GDP per inhabitant in PPS of NUTS
74. Tourism	3 regions

Capital goods:

- 75. R & D intensity
- 76. Labour productivity

Infrastructure & mobility (accessibility):

- 77. Broadband access
- 78. Length of cycle lanes
- 79. Vehicle transport through fast lanes
- 80. Rail network
- 81. Congestion motorways and other roads
- 82. Congestion on other roads
- 83. Distance to airport
- 84. Capacity airport

Knowledge:

- 85. High (tertiary) education
- 86. Employment in science and technology
- 87. Creative sector employment

Adapted from *Integrated Sustainability Monitoring of 58 EU-Cities. A study of European Green Capital Award applicant cities, collaboration with DG Environment, European Commission, and European Environmental Agency – European Topic Center for Spatial Information and Analysis* (p. 21-22), In Zoeteman, van der Zande, Smeets, 2015, Tilburg: Telos.

And adapted from: *A New Sustainability City Index Based on Intellectual Capital Approach.*(p. 6), In Navarro, López-Ruiz, Nevado Pena, 2017, Sustainability 9(5). doi: 10.3390/su905086

4 Results

Table 4 presents methodological characteristic of the EGCA and the SCI. The underlined categories are present in both the indices.

Table 4. Methodological characteristic of the EGCA and the SCI

	Year of research	Data from	Number category or stock	Categories / stock	Number indicators	Total index
			8	Ecological: <u>Soil & ground water</u> , <u>Drinking water</u> and sanitation, <u>Surface water</u> , <u>Air</u> , Nuisance and emergencies, Nature and landscape (<u>land</u>), Energy and climate, Resources and <u>waste</u>	35	
			6	Social-cultural: Economic, political and social participation, <u>Health</u> , Art and <u>culture</u> , <u>Safety</u> , Residential environment, <u>Education</u>	29	
			5	Economic: <u>Labour</u> , Economic structure (<u>GDP</u>), Capital goods, Infrastructure and accessibility, Knowledge	23	
European Green Capital Award (58 European cities)	2015	2004-2014	19		87	52
			4	Environment: Pollution (<u>air</u>), <u>Water</u> consumption, <u>Waste</u> and recycling, <u>Land</u> uses	17	
			4	Social: <u>Health</u> , <u>Safety</u> , <u>Education</u> , <u>Culture</u>	15	
			2	Economic: <u>Labour</u> market, <u>GDP</u>	8	
Sustainable City Index (158 European cities)	2017	2009	10		40	44.92

Source: own study based on research

Descriptive statistics of the EGCA for 58 European cities and the SCI for 158 European cities are presented in table 5.

Table 5. Descriptive Statistic -the EGCA and the SCI

Descriptive Statistic	The EGCA	The SCI
Mean	49.1207	45.9504
Standard Error	0.8974	0.2207
Median	50	46.18
Mode	42	43.52
Standard Deviation	6.8341	2.7738
Sample Variance	46.7045	7.6941
Kurtosis	-0.6272	-0.0349
Skewness	-0.0606	0.2570
Range	29	14.23
Minimum	33	40.08
Maximum	62	54.31
Sum	2849	7260.16
Count	58	158
Largest(1)	62	54.31
Smallest(1)	33	40.08
Confidence Level (95,0 %)	1.7969	0.4359

Descriptive statistics in order to test hypothesis for Ljubljana are shown in table 6.

Table 6. Rank based - the EGCA and the SCI of Ljubljana

Ljubljana	The EGCA	The SCI
01) Index	52	44.92
02) Rank	22	102
03) Relative rank	0.61	0.36

5 Discussion

Analysis and comparison of the multidimensional indicators used in two indices (European Green Capital Award and Sustainable City Index) indicate that ecological (environmental), social (cultural) and economic dimension do not contribute equally to ranking Ljubljana city in the 'greenness' and sustainability framework.

The triple line approach considers environmental, economic and social dimensions in the EGCA58-city study based on 87 (quantitative and qualitative) indicators arranged in 19 stocks. The ecological (environmental) capital includes 35 indicators, the social-cultural capital includes 29 indicators and the economic capital 23. A total score is determined for each stock by adding the weighted scores from all the indicators. Although the indicators are not all considered to be of equal importance, in this specific study the weights of all indicators within a capital are set equal. Stock score for Ljubljana determine ecological capital in 56 %, social-cultural capital in 54 % and economic capital in 47 %. The mean of all three-capital scores determines the total sustainability score of Ljubljana to be 52 %.

The SCI is also based on the triple bottom line of sustainability (environmental, economic and social); 17 environmental indicators, 15 indicators for the social dimension and 8 economic indicators measure 10 categories. The SCI is using a geometric average and considering that averaging indicators are expressed in percentage form. The weighting and aggregation scheme used is based on an objective method principal component analysis (PCA), using the percentage of variance retained by each component and the characteristic vectors. In the composite indicator SCI of Ljubljana the environmental dimension is determined as 35.69, social 52.35, and economic 42.03. Finally, the resulting sustainability index for Ljubljana is 44.92.

Ranking Ljubljana as a 'green' and sustainable city respectively is different. Total index score of 52 % for EGCA places Ljubljana 22nd among the 'green' cities of Europe and ranks it in the upper half of the 58 European cities in the study. The SCI index of 44.92 ranking Ljubljana on the 102nd position in a scale of 158 European cities, places it in the lower half. The relative range EGCA of 0.61 and the relative range SCI of 0.36 also confirm that Ljubljana is more 'green' than sustainable.

The results generate a lot of discussion. As the databases for used indicators and calculations are not accessible, conclusions cannot be expressed with certainty. From the available calculated data for both indices, we can conclude just on the basis of results of individual three dimensions of 'greenness' and sustainability.

The score of the ecological / environmental impact in Ljubljana is much higher in the EGCA than in the SCI. Moreover, the environmental dimension has the smallest share in the SCI of Ljubljana (35.69). How and whether the result of the ecological / environmental dimension is influenced by the fact that in the EGCA this dimension is measured by 35 indicators, while in the SCI by 17 indicators, we cannot determine. But it is obvious that the SCI in category 'Water consumption' defines only two indicators, whereas in the EGCA are included 9 indicators in three categories ('Soil and ground water', 'Drinking water and sanitation', 'Surface water'). Furthermore, the highest and the lowest scoring stock in EGCA of Ljubljana are both given in ecological capital – 'Soil & groundwater' (84) and 'Drinking water & sanitation' (34). In the EGCA Ljubljana and Helsinki are the highest scoring cities for 'Air' (56).

With the purpose of investigating differences in the score of the social (cultural) dimension in the EGCA (54) and in the SCI (52.35) of Ljubljana, we ascertain that the similar four categories are included in both indices. However, in the EGCA two more meaningful categories are included; 'Economic, political and social participation' and 'Residential (living) environment' which probably influence the result. Regardless, the score of the social (cultural) impact in the EGCA of Ljubljana is not evidently different from the one in the SCI.

The score of the economic dimension contributes the least to the index EGCA (47); in the SCI index the economic dimension represents 42.03. Analysis of the indicators (excluding

‘Labour’ and ‘GDP’) shows that economic state in EGCA also concerns ‘Capital goods’, ‘Infrastructure and mobility (accessibility)’ and ‘Knowledge’.

Contrasting the EGCA with the SCI, we observe that the concept is similar and based on three-dimensional framework – ecological / environmental, social (cultural) and economic. There are differences in the disclosure pattern and the depth of ‘greenness’ and sustainability indicators. Altogether, there are 87 indicators of EGCA index, 35 of which belong to the ecological, 29 to the social-cultural, and 23 to the economic dimension. The SCI index is using only 40 indicators to disclose sustainability, 17 indicators belonging to the environmental, 15 to the social, and one fifth to the economic dimension.

The results for Ljubljana show that the majority of the indicators (35 indicators) in the EGCA are in the ecological domain and represent the highest score (56) among all the categories in both indices. In this perspective, the lowest score (35.69) in SCI represents the environmental aspect, which is difficult to explain. Due to insufficient information, we are not in a position to analyse this result and the differences in this case.

The results of the study of 58 applicant cities EGCA are presented in 2015, the data for 58 countries were collected mostly from Eurostat, years of measurement vary from 2004 to 2014. The information available in the Urban Audit database for 2009 has been used for the performance the SCI for 58 European cities in 24 European countries. Therefore, information and data are important to recognise and raise awareness of a need for adaptation in order for the cities to become more ‘green’ or sustainable. Both studies are limited in this sense and do not reflect the current state of Ljubljana. Thus, the authors of the SCI research are now investigating in two ways – through the new source of world-wide data from World Bank Group or by examining the compatibility between the Urban Audit 2013 indicators towards the previous edition of this database.

We reject the hypothesis that all three essential aspects of the EGCA and of the SCI as well contribute equally to the final index result.

Ljubljana’s degree of ‘greenness’ ranking is in the upper half of the 58 European cities, so we accept this hypothesis.

Among 158 European cities the position of Ljubljana according the SCI does not rank in the upper half, therefore we reject this hypothesis.

Relative to the rank we can confirm the hypothesis that Ljubljana is more ‘green’ than sustainable.

6 Conclusion

In this article the focus was on the identification of ‘greenness’ and sustainability indicators, which measure the capability of Ljubljana, capital town of Slovenia. Presented research work

is based on the indices, the EGCA and the SCI, the latest available and published studies where Ljubljana is included.

The results show that Ljubljana 'green' city standing is in the upper half of 58 European cities. Based on the SCI index, the outcome of sustainability emphasizes that Ljubljana does not achieve ranking in the upper half of the 158 European cities. Furthermore, the environmental dimension contributes the smallest share to SCI.

Contrasting these two practices leads to the conclusion that Ljubljana is more 'green' than sustainable. This conclusion is made within the naming of indices, originally named in both studies.

The contribution to the profession is to demonstrate and compare the 'green' and sustainable approach in recognizing city ranking. There are many studies, which make a concerted effort toward capturing the 'greenness' and the sustainability of cities. Therefore, indices include three independent dimensions and are decisive in positioning the city. This is also an important tool to support policy decision on environmental, social and cultural, and economic field. The main research limitation of this proposal is unavailability of complete databases for both indices.

Further research is more than needed, with most recent information available.

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Analyzing injuries in Bitola region into time frame 1999 - 2015

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Abstract

Purpose and Originality: The basic aim of the paper is to present the situation with the health and safety management systems into the industrial entities from Bitola, R. Macedonia, with a special overview to the injured persons into the time frame 1999 – 2015. To be more specific several years from the time frame were selected as key one's, and the same one's are the following 1999, 2008 and the frame 2012-2015.

Method: There were several criteria's which were used while selecting the years. First of all the year 1999 was chosen due to the situation where we had a huge amount of injured persons in one year. On the other hand the year 2008 was chosen due to the issue that the year 2007 was the one in which the health and safety legislation into Macedonia began into law regulations who must be done by the entities, and it was expected to have a situation with reduced spotted injuries on year basis. The analyses were done systematically having in mind several key criteria's such as: the day of the week when the injury was spotted, the time frame of the day, gender of the injured person, spotted professional diseases, total amount of lost working days etc.

Results: At this point it's more than relevant to say that the data presented into the paper are only a small part from a larger research done into the frame of years 2012-2016, a research that is still ongoing.

Keywords: QMS, OSHAS, injury, production systems, health and safety.

1 INTRODUCTION

The labor present representative sample with selected criteria's analyzed with a systematically done survey analysis systematic survey in terms of consistency in the application of safety systems in industrial facilities in Bitola, Republic of Macedonia, research conducted in the period 2012-2016. Now the presented survey is extended with an aim to do a consistent analysis of the gathered data considering the number of injuries in the year 2016, as well as to take concrete steps in the capacities, which would lead to a reduction of the direct work injuries. The main aim of the paper is to represent the selected criteria considering the number and nature of injuries registered into the period 1999-2015, to be more precise the following exact years: 1999, 2008, 2012-2015.

The basic purpose which is the reason why the exact years are chosen is the following: the year 1999 according to official data gathered and analyzed during the research is the year with the highest number of injuries compared to the number of employees into the business entities, the year 2008 is considered as a crucial year when results were expected in terms of reducing the number of injured persons with consistent application of health and safety law regulations into

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Macedonia (adopted in 2007) and also the current display of the situation with work injuries into the time frame 2012-2015.

The paper selects several key criteria according to which the analyses were done such as: the number of registered injured persons, the total amount of lost working days, the gender of the injured person, the ratio of men vs. women, the time interval when the injury was spotted, the day as well as the registered occupational diseases as a result of current work activities.

What is essential mentioning, in order to prove the consistency and systematically taken actions while doing the survey is to mention that the same one was done into a long period, to be more precise the time frame year 2012-2015. Also, into the process of research and analysis all of the used information were from relevant institutions where injuries are recorded, such as: the regional unit of the Ministry of Labor - local health and safety Inspectorate, the local department of the Health fund, the association for safety Bitola and the industrial facilities where injuries were spotted.

So considering all of the sources for data gathering, the factor of neglect on work injuries is very small. The data presented into the research are only a small part from the gathered data, presented into several key criteria's with an aim to present the total amount of injuries but also to take concrete measures in accordance with the data obtained, to increase the safety into direct work places. All of the presented material from the research was with an global aim to take some concrete preventive measures which would lead to expected decrease into numbers considering the injuries into direct work places.

2 Presenting The Data From The Survey

In addition to this section several table views are presented, which are the best way to present the data from the injured persons into industrial entities from Bitola. Seeing the presented data, what is worth mentioning is the fact that most of the injured workers are from the so-called age group "most experienced employees". Those are the workers who are before retirement (year or two to their retirement). The situations presents us that those are the most injured ones with over 50% from the total amount of injured persons. Seeing the gathered data we concluded that there are multiple reasons for the previous mentioned situation, but that is for some another issue of the journal. In addition to the paper several table views are presented such as: the difficulty of the spotted injury, day of the week when the injury was spotted, time frame, the gender of the injured person as well as the professional disease as a result of the working activities.

Firstly a table view in which data according to the criteria - difficulty of the injuries is presented. While doing the table view, the law regulations were taken in mind and according to the same one the injuries are divided into three group categories: light (injuries without leave or long – term consequences), heavy (injuries with some deformations, seizure of body parts and permanent disability) and death (death occurred at the scene, while going to the nearest hospital or as a result of the injury after a period of time).

Table 1. Criteria – type of injury – lost working days

Year	Number of injuries				Lost working days
	Light	Heavy	Deadly	Total	
1999	597	51	2	650	28893
2008	320	35	2	357	5927
2012	329	7	0	336	no data
2013	344	7	0	351	7994
2014	281	41	1	323	7167
2015	267	43	1	311	6366

So, before we switch to a further presentation of the data, it's especially important to note, during the field research and communication with employees, despite the legal obligation for reporting any working injury on direct work places regardless of the character and nature of same one, there are some of the so-called "small - slight injuries" which aren't reported by the employees itself, or by the industrial entity. Such injuries are small slights, dents and so on, which the employees themselves treat them with serious less, but on other hand the legislation says that every injury regarding the type and the nature of the same one should be reported. In addition a table view is presented, the results according to a key criteria – day of the week are presented.

Table 2. Criteria – day from the week when the injury was spotted

Year	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
1999	129	120	129	129	101	40	30	650
2008	63	67	58	58	62	32	17	357
2012	69	59	62	60	50	25	11	336
2013	60	60	67	69	48	27	20	351
2014	52	53	48	58	54	39	17	304
2015	66	57	51	51	49	24	13	311

Analyzing the data presented into the table view 2, what is key to mention is to say that most of the injuries were spotted into the day period Monday to Friday, but having in mind the basic work activities into real capacities several injuries are spotted into the so-called weekend days (Saturday and Sunday). But what is more than important to say is the fact than into the year 2014 we have spotted 19 injuries without information about the day when the injury occurred. Having in mind the legislation which says that every injury must be recorded no longer than 48 hours from the moment of occurrence, it's a very symptomatic situation to have 19 injuries without information about the day of occurrence.

In addition, of the paper, we have presented data about the time frequency. From what is presented into the table view 3, key moment for consideration is that all of the time frames are according to the Macedonian legislation. Those are (00-04,04-08,08-12,12-16,16-20,20-24) in hours. In addition, all of the gathered data are presented into table view. All of the data

presented are according to the starting hypothesis which says that everybody could be injured, every day in every time frequency during the work activities on direct work places.

Table 3. Criteria – time frame

Year	00-04	04-08	08-12	12-16	16-20	20-24	TOTAL
1999	29	109	272	157	55	28	650
2008	8	42	156	91	38	21	357
2012	8	67	125	85	31	20	336
2013	13	52	138	95	37	16	351
2014	12	42	109	93	44	19	319
2015	16	45	111	91	31	16	310

Seeing the presented results into the table view, we have a similar situation as before, injuries that are recorded without a time frame when the injury occurred. So we have 4 such cases into the year 2014, and 1 such case into 2015. This situation is very similar to the previous situation into the table view 2 where we had 19 such cases. The situations previously mentioned led us to the conclusion that some mistakes were done into the evidencing of the injuries, mistakes made by the industrial entities, the local labor inspectors and from the persons into the industrial entities which are in charged to do such reports, although it is a legal regulation.

In addition of the paper another table view is represented where the data are collected and presented according to the key criteria – gender of the injured person. And before we represent the table view 4, we should mention one of the starting hypotheses, according to which we expected most of the injured persons to be male. This starting hypothesis was as a result of the information's according to which most of the employed persons in Bitola's region are male (almost 2:1 on the male side).

And before we represent the final table view 4, we should mention the situation with the professional diseases which according to the legal regulations should be evidenced, but generating the data we had an situation where the enterprises doesn't know if they had an employees with professional disease, which is very strange according to the situation where every employee should have and health exam every 2 years. This situation is very strange also if we had in mind the situation that we have several large companies from the metallurgy sector, the tobacco sector, where worldwide there are several professional diseases every year. All of the data presented into table view presents the situation, excluding the year 2008 where we had 5 professional diseases reported. This situation needs detail additional research.

Table 4. Criteria – gender of the injured person

Year	Number of injuries			Professional Disease
	Male	Female	M/F	
1999	543	107	5	/
2008	300	57	5.3	5
2012	246	90	2.73	/
2013	269	82	3.28	/
2014	249	74	3.36	/
2015	215	96	2.24	/

Seeing the data presented into the table views, we can conclude that a large amount of relevant data regarding work injuries into Bitola's region are presented, having in mind long time period (1999-2015). But the key point of view is to mention that the data presented are only a small part from the research. On the other hand, considering the fully research data are analyzed considering several other key criteria's, but not only with an aim to have statistics. Contrarily several key steps with a cooperation with the industrial entities where all of the injuries were spotted, were done with an aim to reduce the amount of injuries into the year 2016. That is the reason why the research is ongoing, and at the moment all of the data from the year 2016 are analyzed. So with this newest data we could say if the key steps were usefully. This could be a material for some other paper maybe for the same journal.

3 Conclusion

The paper presents unique segment from a conducted research, systematically done in a point of view considering the injuries into the enterprises from Bitola's region. What is necessary to say now, is to consider the fact that the research was done with an aim to get an real picture about the quality management systems into real enterprises, considering the key element – injuries into direct work places. On the other hand, the research directly presents the incorporation of the law and regulations in aim of health and safety on direct work places on one hand and on the other to see all of the measures which are more than necessary with a final aim reducing the work injuries.

Seeing the results presented into the table views, we can consider that the number of spotted injuries is reducing from year to year, but seeing the law and regulations, not with the dynamics which are expected and which were a starting point of view while doing this research. Starting hypothesis was set up considering the fact that all of the business enterprises have done the necessary evaluation on direct work places considering the safety risks. All of the previous mentioned led us to the conclusion the every worker, regarding the work position, regarding the work experience, regarding the age and the gender could be injured. Finally, I could mention that the data presented into the paper are only a small part from a research which was done, and it's still ongoing having in mind the data gathered.

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Impact of a Detox Diet paradigm in Weight Management

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Abstract

Research Question: The main Research Question concerns the attitudes of the respondents about the “detox” diet. The term detoxification as a concept is not considered as new but its application has known a drift starting from religious point of view in terms of purification and redemption to therapeutically characteristic in treating alcohol or drug addiction until its new relevance in treating obesity and reducing fat. This new paradigm has been used in health and wellness centres by dieticians and practitioners to overcome the failure of traditional diet programs.

Purpose: The purpose of the study is to define, present and qualify the “detox” concept or paradigm and to investigate the attitudes of the respondents towards the “detox” concept as a diet method.

Method: Participants in the study are divided into two groups; the group that already used “detox” and the group that have not yet used “detox” diet. The two groups are asked the same questions which are designed to measure their attitudes regarding “detox” diet. For this purpose, a quantitative analysis is conducted using descriptive statistical non-parametric method Chi-Square.

Results: There is no significant difference of attitudes toward a detox diet between the users and non-users of it ($p > 0.05$).

The results of the study show that detox diet is not something appealing for the ones who went through it although they admit that it is an effective method to lose weight and get healthy. The same approach sounds to be seductive for the patients who didn't try it before in order to get healthy without specifying the right time to follow such diet.

Organization: The results of the study emphasises the need of organizations who provide “detox” diet, to present it to the potential customers and to point out its positive effects on the health of the people, who use it.

Society: Study results emphasise the social responsibility of the providers of “detox” and the administrative authorities, to motivate and support the research on the “detox” diet, and its positive and negative effects on the health of the population. The stakeholder in a society, who take care of the health of the population, should rise the question of physical fitness and the healthy life style of the people.

Originality: The main value of this research study is to address the meaning of the healthy life style of the people and the means like “detox” diet to exercise it.

Limitations: The patients who were investigated in the study are all adults and considered as healthy with no remarkable illness. Yet, the participants of the group that has experienced detoxification cooperated in a diet voluntarily or upon the recommendation of the dietitian.

Further research: To overcome the debate between positive support and side effects claims, there should be tangible indicators like testing methods in the process of determining the main markers of intoxication and their relation with stubborn fat as well as the connection between the concentration of toxins decline in the blood and the level of metabolism and percentage of fat to prevail over the approach limitations. Measuring the toxins concentration and comparing them before and after detox diets adjust the research from being assuming to scientifically proven one.

Further research should address the relation between the healthy life style and the need to use the models like “detox” diet to achieve it.

Keywords: paradigm, health, life-style, body weight, detox diet, detoxification.

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1 Introduction

Change is a constant and inescapable part of life. As Humans we are all capable of and subject to change (Keith, 2016). This continuous desire is applied in the search for a new movement whether in fashion, technology, design and even when it comes to food and diet methods. In this context, people tend to have an urgent need to reach their target in a fast way regardless of any possible side effect. For instance it was found that The American psyche is focused on quick results in many areas, including weight loss programs (Weintraub, 1992).

People follow what is trendy and overspread. Although traditional diet school therapies have always been reliable with good effect, but the urge need for new treatments sounds like tempting to try.

Detox in Nutrition has always been in religious practices and through traditional customs and cultures long before; nowadays the concept of cleansing and rejuvenating the body system is gaining attractiveness and spreading through press, social media, magazines, books and celebrities 'stories. The main question to tackle is about the effectiveness and the side effects of detoxification in terms of reducing weight while improving health being.

1.1 Detox History

Detoxification is an ancient process of purification and cleansing that dates back as far as the Roman, Greek, Native American and Indian Cultures. Traditional herbal medicine for example is cross cultural; it was and has been a ritual in many societies. Many effective techniques are still used to rid the body of toxins such as saunas, fasting, rebounding, dry brush, herbs, rest, water, meditation, exercise and a variety of body work (Carty, 2015). The concept behind these cleanses is as old as human history. "There's a straight line from detox diets to classical religious fasting," says Harvey Cox, professor of divinity at Harvard University (Springen, 2008). Saint Augustine once said "fasting cleanses the soul and raises the mind" (Burriss, 2016). In many religions, fasting is associated with enlightenment and atonement and understanding the suffering of the poor. "It's a way of resetting one's moral clock, of starting with a clean slate," says Michael McCullough, a psychology professor at the University of Miami. Christians fast during Lent, Muslims fast during Ramadan and Jews fast on Yom Kippur, the Day of Atonement that follows the New Year. "Fasting builds self-control," says McCullough. "It allows people to build strength for when they have to adhere to some other moral dimension of their religion." (Springen, 2008)

The seductive power of detox diets presumably lies in their promise of purification and redemption, which are ideals and deep-rooted inhuman psychology (A. Klein & Kiat, 2015).

1.2 Detox types

Detox diets range from total starvation fasts to juice fasts to food modification approaches and often involve the use of laxatives, diuretics, vitamins, minerals and/or 'cleansing foods' (Allen, Montalto, Lovejoy, & Weber, 2011).

Catherine Collins, an NHS dietitian at St George's Hospital says. "The ultimate lifestyle 'detox' is not smoking, exercising and enjoying a healthy balanced diet like the Mediterranean diet which is adorned with meats, fish, olive oil, cheeses, salads, wholegrain cereals, nuts and fruits."

1.3 Purpose and goal of the research

The aim of this Research is to weigh and compare between the negative effect of detoxification and the supporting ideas and thoughts where the studies are founded on chemicals and pollution effects on health. The study further assists in evaluating objectively on the effectiveness of detox therapies in terms of weight management and opens new windows on future investigation to have more accurate answers and proofs on detoxification.

2 Literature review

2.1 Detox side effects

2.1.1 *Detox criticism*

The detox term and concept has been criticized by many scientists pointing on its side effect and its poor evidence of cleaning the body and eliminating "toxins". For instance The British Dietetic Association described it as "a popular nonsense buzzword in the health and beauty world" and as a "marketing myth rather than nutritional reality" (Porter, 2016).

Currently, no scientific studies have investigated the effectiveness of commercial detox diets for losing weight (A. Klein & Kiat, 2015).

Some claim that the idea of flushing your system of impurities and leave your organs squeaky clean and raring to go is a scam. It's rather a pseudo-medical concept designed to sell you things (Porter, 2016). Edzard Ernst, emeritus professor of complementary medicine at Exeter University classify detox as two types, one is respectable and the other isn't. The respectable one, he says, is the medical treatment of people with life-threatening drug addictions. The other is "the word being hijacked by entrepreneurs, quacks and charlatans to sell a bogus treatment that allegedly detoxifies your body of toxins you're supposed to have accumulated." (Mohammadi, 2014).

Till now, there is a lack of regulation in the detox diet industry; the EU has refused to authorize the detoxification claims of a dozen nutritional substances (Sante, 2013).

2.1.2 *Weight loss disadvantage*

The body is a well-developed system that has its own built-in mechanisms to detoxify and remove waste and toxins through numerous organs, such as the skin, gut, liver and kidneys (A. Klein & Kiat, 2015).

Foreign chemicals that are not easily removed by these processes include Persistent organic pollutants (POPs) and some metals (Sears, 2012). POPs are industrial chemicals banned in

EU and the USA since 1970s, accumulate in human adipose tissue. POPs have been used in flame retardants, pesticides and paints, as well as in coolants and lubricants in electrical equipment (Jones & De Voogt, 1999).

A scientific theory has been released in the 1980s when the Environmental Protection Agency (EPA) conducted a program called the National Human Adipose Tissue Survey (NHATS). In this research it was found that White Adipose Tissue represents a reservoir of lipophilic environmental pollutants, especially of those which are resistant to chemical and biochemical degradation so called POPs (Müllerová & Kopecký, 2007).

Therefore, weight loss has been shown to produce an increase in blood concentration of potentially toxic organochlorine pollutants like pesticides and Polychlorinated biphenyls (PCBs) in obese subject (Chevrier et al., 2000; Rouhou, Karelis, St-Pierre, & Lamontagne, 2016). In conclusion, toxic PCBs and related compounds are clearly released from stored fat and are in higher levels in the blood when losing weight. It has been shown also that the released toxins can depress the thyroid function (Richards, 2014).

2.1.3 *Diet failure and effect of severe energy restriction*

On the other side, results of random digit dial surveys indicate that around 20% of people in the general population are successful at long-term weight loss maintenance (Wing & Phelan, 2005).

This low percentage is due to many factors and explanations among which we can correlate dieting to a stressful experience comprising physically aversive feeling of hunger and deprivation of food, resisting temptation and energy restriction (Tomiyaama, 2010). In addition, there is convincing evidence that stress stimulates appetite and weight gain through elevations of cortisol which is a stress-induced eating hormone (Nakamura, Walker, & Ikuta, 2016; Torres & Nowson, 2007).

Based on the work of Mazurak (Mazurak et al., 2013) and Tomiyama (Tomiyaama et al., 2010), it is possible that low-energy detox diets increase stress, elevate cortisol and stimulate appetite, thereby making it difficult to lose weight.

In addition, according to the Food and Agriculture Organization FAO, the overall minimum daily per person energy requirement is approximately 7.03 MJ (1680 kcal) (FAO, 2008). Also FAO/WHO (World Health Organization) recommends that adults should consume 133 mg nitrogen/kg per day or 0.83 g/kg body weight of high quality protein per day (WHO, 2007).

Severe energy restriction and nutritional inadequacy can lead to protein and vitamin deficiencies, electrolyte imbalance, lactic acidosis and even death (Johnstone, 2007; A. Klein & Kiat, 2015).

2.2 Detox evidence and demanding analyses

2.2.1 Overview on Chemicals

A normal healthy body can naturally detoxify itself and get rid of its own produced toxic wastes as fast as they are produced. Due to toxic overload or impairment of the body's own natural detox and elimination functions, toxemia occurs and the conditions of disease are therefore created when toxins are retained and stored in the body.

During any detox program, the organs of elimination (skin, liver, kidneys, colon, and bladder) must work overtime to process and excrete all the accumulated toxic wastes that are loosened and released from organs and tissues throughout the body (Reid, 2016).

Global industrialization has seen a marked rise in the number of chemicals to which we are exposed. In both the European Union (EU) and the USA, approximately 80 000 chemicals are currently in use (Brown, 2003; Walker, 2014). In the EU, regulation introduced in 2007 requires any chemical substance used or produced by companies to be registered¹². For a chemical to be registered, the potential risks and hazards must be assessed (the amount of testing depends on the tonnage produced). To date, the European Chemicals Agency (ECHA) has registered approximately 17206 substances, meaning that there are thousands still to be tested (Gustavsson, Hellohf, & Backhaus, 2017). Till present the European Chemicals Agency identified (ECHA) 63 restricted substances for which manufacture, placing on the market or use is limited or banned in the European Union. A List of 173 substances of very high concern for Authorisation is published in accordance with Article 59 of the REACH Regulation (Genuis, 2011). In the USA, an estimated 2000 new chemicals are introduced into foods and consumer products every year, many of which have not been tested for adverse health effects (Walker, 2014).

2.2.2 Pollution and Industrialization effect

In his book "The Tao of Detox", Daniel Reid associates the pollution and industrialization effect with diseases and degenerative conditions. Accordingly, the only real way to cure the body is to eliminate the root cause by ridding the body of the toxins that pollute the blood and tissues, attract germs and weaken the resistance and immunity; The blood is constantly polluted by excess acid residues from wrong eating habits, alcohol and drugs, stress-hormones and other acid-forming factors. Acidosis and hypoxia (oxygen deficiency) are the primary conditions of imbalance that permit germs to breed, tissues to degenerate and cancer to develop. Excessive levels of acid residues in the blood and tissues suppress immune response, interfere with normal metabolism, inhibit digestion and assimilation, promote fungal and bacterial infections and cause all sorts of other biological malfunctions and ill health (Reid, 2016).

It is well-established that some synthetic chemicals accumulate in the human body and that high doses can be toxic (Genuis, 2011; Wang, Asimakopoulos, & Kannan, 2015).

2.2.3 Evidence of eliminating toxins

The Centers for Disease Control and Prevention's Agency for Toxic Substances & Disease Registry defines detoxification as “the process of removing a poison or toxin or the effect of either from an area or individual.”(Allen et al., 2011)

Although there is currently no evidence to support the use of commercial detox diets for removing toxic substances from the body, there are some preliminary studies suggesting that certain nutritional components possess detoxification properties (A. Klein & Kiat, 2015).

For example there is evidence that coriander, malic acid (found in grapes and wine), citric acid (found in citrus fruits), succinic acid (found in apples and blueberries), citrus pectin (found in the peel and pulp of citrus fruits) and Chlorella (a type of green algae) exhibit natural chelating properties, suggesting that they may be useful for the elimination of toxic metals (A. Klein & Kiat, 2015).

In general terms, the detoxification process involves two, potentially three, phases. CYP450 is the family of enzymes responsible for phase 1 (Jeffery, 2007).

In general, B vitamins, glutathione (the body's main detoxifying antioxidant), and flavonoids have been shown to assist phase 1 detoxification, whereas all major conjugation reactions in phase 2 require micronutrient coenzymes, including glycine, N-acetylcysteine (NAC), and B vitamins (Bralley E, 2008). For example, the phytochemicals that induce phase 2 enzymes can be found in cruciferous vegetables, onions, and garlic (Konsue & Ioannides, 2010). Fiber intake supports regular elimination, which is crucial for excreting toxins through the bile and stool, noting that brown rice fiber may be particularly beneficial in eliminating fat-soluble toxins. Turmeric/ curcumin has shown promise in protecting the gallbladder and promoting bile flow (Rasyid, 2002; Seo et al., 2015), and research has shown the potential for pomegranate/ ellagic acid in assisting detoxification pathways (Barch, Rundhaugen, Stoner, Pillay, & Rosche, 1996; Danesi et al., 2014).

Much research has focused on green tea's potential benefits in detoxification, and one study showed its particular promise in promoting the induction of phase 2 detox enzymes (Harrouff, 2012). Research has shown promise for various other foods in assisting the detoxification process, including high-quality proteins, artichokes, watercress, cilantro, and apples (Jeffery, 2007).

2.3 Celebrities' influence on patients' health-related behaviors and body image perception

Women generally have higher levels of body dissatisfaction than men. Body Dissatisfaction is associated with various health-related behaviors, some of which present significant health risks (Grogan, 2016). Pre-adolescent girls perceive ideal body figure in preference to be thinner (Collins, 1991).

Research, primarily conducted in the U.S., UK, and Australia, has obtained considerable evidence for media effects on thinness ideals and body dissatisfaction (Perloff, 2014); It has been suggested that media contributes to body dissatisfaction through the portrayal of unrealistic ideas (Grogan, 2016).

Much of the interest in detox cleansing and fasting can be attributed to celebrities like Salma Hayek and Ashton Kutcher who have made such behaviors socially acceptable and popular for weight loss and reducing gastrointestinal malaises. For reliers, many of their friends, family members and colleagues may follow or discuss celebrity medical advice, which indirectly encourages them to act similarly. For searchers, the information they gather may knowingly or unknowingly include advice from celebrities, especially as the internet burgeons with the health information they share. This means that all types of people, not just gossipmongers or people with low self-esteem can be affected by the ways celebrities shape the social construction and reconstruction of health information (Hoffman & Tan, 2015).

Some examples of detox diets promoted by famous celebrities include for instance "the 7-day Detox Diet" created by Gwyneth Paltrow which includes a mix of smoothies, salads, soups, fruits, seeds and nuts, fish, chicken, and whole grains.

Another detox diet is "the Master Cleanse" followed by Beyonce. This one also referred to as the lemonade diet consists of only consuming a lemonade-like drink made from fresh lemon or lime juice, maple syrup, cayenne pepper, and water (Yovino, 2016).

2.4 The new approach of detoxification in clinical practice

This new paradigm intrigued dietitians to integrate Detoxification in their diet program; When applying a diet to lose weight, some dietitians use detoxification as an initial step, others incorporate it in their diet and some of them may use it as an option when the patients reach the so called "plateau".

In a survey assessing the attitudes and uses of cleanse and detoxification diets by registered dietitians (RDs), it was found that 80% of RDs surveyed do not recommend cleanse/ detox diets although it was found that there is an increase curiosity in knowing more about detox from the patients (Herbold & Mulvaney, 2014).

In clinical practice, When determining whether a detoxification protocol may benefit a client, qualified RDs often assess a person's toxic exposure and genetic profile with one or more of a variety of tools and tests such as blood or urine profiles for testing specific toxic accumulation in the body, gene panels done via blood testing or checking swab tests (Dupas & Dagonne, 2013).

However, the search for reliable biomarkers to accurately assess toxicity and chemical and environmental sensitivities continues (De Luca, Raskovic, Pacifico, Thai, & Korkina, 2011).

Encouraged by the research conducted so far, many integrative medicine nutritionists and other health professionals are including detoxification protocols in their clinical practice (Allen et al., 2011).

2.5 New paradigm in wellness and health centers

Most detox centers have been well known for rehabilitation from drug and alcohol addictions as well as smoking cessation. But nowadays we are more opt for centers offering wellness programs of integrated therapies, assessments, consultations and treatments including detox and weight loss, fitness, hypnotherapy, yoga, Ayurveda, spa... These programs are like a business enforced with marketing figures of weight loss in a short treatment period which makes them more and more appealing and popular.

2.5.1 *Wellness and Health centers common therapy in treating obesity*

Most of wellness and health centers treat obesity and weight management in a similar way, setting a referral program that addresses the problems of the overweight and obese, enabling them to regain control of their lives and their health by giving them the necessary life skills to lose weight and achieve a healthier lifestyle. The program most commonly includes individualized plans in a comprehensive and multidisciplinary way sensitive to the special needs of the overweight and obese, providing a comfortable and supportive environment through focused education and incorporation of lifestyle changes leading to an improved state of health. Some centres work on supplementation and non-invasive machines others provide necessary medical and surgical intervention so that the overweight and obese can successfully lose weight eliminating the diseases resulting from their excess weight.

2.5.2 *Detox in wellness centres*

Recently a new trend has been introduced to the wellness centres in the purpose of adding a new value for their services and decreasing the level of failure attributed to traditional diets. The main common target of these programs is to lose stubborn fat, decrease water retention, fight bloating and constipation.

At *Dermapro* for instance, a Wellness and Healthcare center in Lebanon, the concept of detoxification was first introduced in 2015; the detox process starts with an advanced body screening to determine the level of toxins, heavy metals and functionality of organs in the body. The screening is to be followed by a consultation with a clinical nutrition expert to determine the most adequate form of detox to follow. The consultation is succeeded by a machine-induced detox through the newly introduced "Iyashi Dome". The latter is a revolutionary detox machine that helps blitz away the build-up of toxins and restores the body to its natural state of equilibrium. Other advanced therapies are used to enhance the detox treatment including the Pulsed Electro Magnetic Field Therapy (PEMF) and Ozone therapy. In-house nutritional experts also offer complimentary customized nutritional detox services and made-to-order juices and meals. Among the stated reasons to opt for detox program is that it promotes healthy weight loss while allowing the body to absorb the necessary aliments needed.

The “Iyashi Dome” detox machine is also introduced in November 2015 at a five-stars hotel (*Le Royal*) in Lebanon with a marketing claim that it helps to eliminate toxins and fat with a “drop down 2 dress sizes”.

Other examples include *TermeKrka*; a medical wellness center in Slovenia which offers weight loss and detox programs through nutrition diets, exercises and massage therapies. The detox diet at *TermeKrka* is based on fasting methods.

SpaDreams offers a vast array of detox diet packages in luxury resorts in Europe. Most of detox programs include thermal water, fasting juice, hiking, Nordic walking, fasting therapy, yoga and much more, designed to help you make long-term changes towards a healthy lifestyle.

At *New Leaf detox Resort* in Thailand, programs are offered for weight loss based on fasting, Detox Juices, Smoothies & Soups, Supplements & Herbal Teas. Ozone therapy can also be used.

These centers use “detox” as a keyword to attract customers and patients to subscribe and be active members in their activities. Their increase and abundance is directly correlated to the customers need which in turn is based on success stories.

3 Method

The only paradigm that can lead to human development encompasses the old within the new (Hampden-Turner, 1996). The main target of nowadays detox diet is directly associated with weight management. So whether it is ancient, related to religion or even trendy and associated with weight loss, people who are following this kind of diet are searching for purification and elimination of toxins in a general point of view which has a positive influence on their health and enhance their metabolism.

To analyse the attitudes toward the role of detoxification, a quantitative analysis is conducted using descriptive statistical non-parametric method Chi-Square.

The attitudes of the respondents Yare analysed through comparing two groups with participants, who never used detox diet and with participants, who experienced the “detox” diet. Thus, the data of the attitudes of “detox” non-users will serve as the observed values, and the data of users of the “detox” diet will serve as the expected values in a statistical analysis of the attitudes of the respondents.

SAMPLE

The target group consists of 20 patients randomly selected from a diet clinic in Beirut, Lebanon. The patients are equally divided into two sub-groups aging between 20 and 45 years old, therefore the selected people are adults, all of them are Lebanese and none of them presents a history of drugs intake or smoking or alcohol addiction. There is no preference for

gender nor for ethnicity and religion and most of them are educated. So, their answers are independent of their age and their culture background.

The first group presents people who already experienced detox diet at least once along with their diet program. In the second group, we have patients who are following a regular diet program.

The same questions are asked to the two sub-groups as shown below and results are collected accordingly to check their different point of view and their position toward detox diet (see appendix).

INSTRUMENT

The respondents in the study are asked a set of questions in order to describe their attitudes towards a detox diet using ordinal scales.

Questionnaire of attitudes toward a detox diet

1. When do you think is the best time to follow a detox diet:
 - a. After holidays / junk food diet
 - b. When getting a bad result from lab tests
 - c. When feeling down or lazy
 - d. When having malaise / bloating / constipation / headaches
2. What is your expectation from detox plans
 - a. Fitness and shape
 - b. Health
 - c. Peaceful mind and relaxation
3. Do you encourage your friends for a detox plan regularly?
 - a. Yes
 - b. No
 - c. only if they need

4 Results

The results of the first sub-group in Table 1 show that 80 % of respondents are willing to take a detox therapy after holidays or as a therapy after having a period of junk food diet, 10 % follow a detox diet when having malaise, bloating, constipation or headaches, 10 % are willing to take a detox therapy when they get a bad result second to a lab testing and none think about detox therapy as a mean to overcome the feeling of being down and lazy. 70% of the respondents in this study, expect better health after the treatment with a detox diet. Whereas 30 % expect to be more fit and in shape. Finally, 70% of patients who tried a detox diet are willing to encourage their friends to use it regularly only if they need it.

Table 1: Answers from patients who experienced detox diet

	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
P1	X				X					X
P2	X					X				X
P3	X					X				X
P4	X					X		X		
P5				X		X				X
P6	X					X				X
P7		X				X				X
P8	X					X		X		
P9	X				X					X
P10	X				X			X		
Sum	8	1	0	1	3	7	0	3	0	7

One can conclude that the experience of patients with a detox therapy is positive, especially when they try it after the holidays. It seems that they associate it with better health and well-being. However, the findings of the study show that majority of respondents use the detox diet when feeling bad or when they fear for their health, and not as habit of a healthy lifestyle.

As the results show, the aim of the patients is that the detox therapy is primarily as a tool to lose weight in order to be healthy. But on the other hand, they promote detoxification and advise others to follow it only upon need. Patients' answers showed their opinion about detox as an approach to lose weight in order to be healthy. But still they are not keen to follow it as a preventive method but rather when only they gain extra fat to feel healthy again-

The results of the second sub-group in Table 2 show that only 30% of respondents are willing to take a detox therapy after holidays, 30% follow a detox diet when having malaise, bloating, constipation or headaches and the same 10% are willing to take a detox therapy when they get a bad result second to a lab testing, whereas 30% feel that detoxification treats laziness and encourage positive well-being. The question concerning the expectation from detox diet has the same percentage as for the people who experienced detoxification (70% of the respondents expect better health whereas 30% expect to be more fit and in shape). Finally, 70% of patients who tried a detox diet are willing to encourage their friends to use it unconditionally and 20% encourage to follow this diet only if needed.

Table 2: Answers from patients who never experienced detox diet

	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
P1			X		X			X		
P2				X	X			X		
P3	X					X		X		
P4			X			X		X		
P5				X		X		X		
P6	X					X			X	
P7	X				X					X

P8		X				X		X		
P9			X			X				X
P10				X		X		X		
Sum	3	1	3	3	3	7	0	7	1	2

The second sub-group, which never before has experienced detoxification through a detox diet, expressed more enthusiasm towards trying detox diet. We found positive attitudes of users towards a detox method regarding health and detoxification, but there are differences between the attitudes of the users and the non-users.

Table 3: Observed vs. Expected Frequencies

Questions	observed - non-users	expected - users	O - E	(O-E) ² /E
1a	3,000	8,000	-5,000	3,125
1b	1,000	1,000	0,000	0,000
1c	3,000	0,000	3,000	0,000
1d	3,000	1,000	2,000	4,000
2a	3,000	3,000	0,000	0,000
2b	7,000	7,000	0,000	0,000
2c	0,000	0,000	0,000	0,000
3a	7,000	3,000	4,000	5,333
3b	1,000	0,000	1,000	0,000
3c	2,000	7,000	-5,000	3,571
Sum	30,000	30,000	0,000	16,030

Apparently, there is no significant difference of attitudes toward a detox diet between the users and non-users of it. The differences between the attitudes of non-users and users of a detox method are obvious, but not significant (Chi-Square = 16,02976; df = 9; p = 0,066267)

Yet, one can conclude that detox diet is not something appealing for the ones who went through it although they admit that it is an effective method to lose weight and get healthy. The same approach sounds to be seductive for the patients who didn't try it before in order to get healthy without specifying the right time to follow such diet.

5 Discussion of the results and the methodology

Twenty patients were involved in the qualitative research study. The findings showed a homogeneity in the vision of detox as a method to lose weight. The group has a Lebanese roots, so further studies may be needed to seek other nationalities' opinion from developed and third world countries. The assessment doesn't consider the types of detox assuming from the interviews that the patients were given professional and clinical advice eliminating by that the possibility of fad diets, therefore there was no further investigation with the patients who already tried them about their types and variety.

The outcomes emphasize on the new paradigm approach regarding the effectiveness of detoxification in losing weight and eliminating toxins which is reflected with a better health being. There is a general assumption that detox is a healthy method which could be considered frequently to recapitulate and stay on a track of a healthy lifestyle besides losing weight.

Considering the popularity of detox diets, consumers and medical professionals should be better informed about their possible risks and benefits, and legislation should be put in place to protect consumers from unsubstantiated claims.

Although it is plausible that energy-restricted detox diets are able to produce short-term weight loss, it is unclear whether these diets are useful for maintaining a healthy weight in the long-term. There is no doubt that sustained healthy habits are of greater long-term value than the quick fixes offered by commercial detox diets. (J. Klein & Murcott, 2014)

The importance of a sustained period of rest and relaxation as an absolute prerequisite for any detox program to be effective cannot be overemphasized, especially in today's fast-paced, high-stress world, where resting quietly, breathing and doing nothing is regarded as a "waste of time".

6 Conclusion

In conclusion, whether detox is attributed to rejuvenating, eliminating toxins, losing weight, increasing metabolism and promoting health, it is obviously clear that such therapy is facing success and development in the field of wellness clinics due to the increase need of customers which triggers the other wellness centers to follow the path and integrate it in their programs.

More studies are needed to deeper the investigation on testing in a scientific way while comparing the concentrations of toxins before and after detoxification and study effectively the relationship between toxins effect on metabolism and stubborn fat.

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APPENDICES

Questionnaire of attitudes toward a detox diet

1. When do you think is the best time to follow a detox diet:
 - a. After holidays / junk food diet
 - b. When getting a bad result from lab tests
 - c. When feeling down or lazy
 - d. When having malaise / bloating / constipation / headaches
2. What is your expectation from detox plans?
 - a. Fitness and shape
 - b. Health
 - c. Peaceful mind and relaxation
3. Do you encourage your friends for a detox plan regularly?
 - a. Yes
 - b. No
 - c. only if they need

Table 1: Answers from patients who experienced detox diet

	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
P1	X				X					X
P2	X					X				X
P3	X					X				X
P4	X					X		X		
P5				X		X				X
P6	X					X				X
P7		X				X				X
P8	X					X		X		
P9	X				X					X
P10	X				X			X		
Sum	8	1	0	1	3	7	0	3	0	7

Table 2: Answers from patients who never experienced detox diet

	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
P1			X		X			X		
P2				X	X			X		
P3	X					X		X		
P4			X			X		X		
P5				X		X		X		
P6	X					X			X	
P7	X				X					X
P8		X				X		X		
P9			X			X				X
P10				X		X		X		
Sum	3	1	3	3	3	7	0	7	1	2

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