

# Tourism Assessment of Roman-Catholic Sacral Objects Using Analytical Hierarchy Process (Ahp) – Case Study of Novi Sad, Petrovaradin and Sremska Kamenica

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## Abstract

*Because of its geopolitical and tourist location and because of its ethnic composition, Novi Sad is known as one cosmopolitan city that grew to become the place of gathering and dialogue of many nations, cultures and religious communities. No matter if they are believers, agnostics, atheists, pilgrims, city tourists, travelling through or are the inhabitants, young, middle-aged or retired, all beneficent people can find here all the necessary information written on the account of rich religious and historical sources. The subject of this paper is the tourist valorization of the eight most attractive Roman-Catholic sacred objects in Novi Sad, Petrovaradin and Sremska Kamenica. In this paper the analyzed cultural and religious assets represent alternatives while indicators of the quantitative-qualitative method of assessment of cultural sites are used as criteria. And AHP gradually compares alternatives according to chosen criterion and measures their impact on the goal, which helps man to make the right decision. From the results of the assessment of the analyzed sacred objects The Name of Mary Church with Catholic churchyard and Vicarage – Novi Sad is ranked as the most attractive site. Then, in second place is the Franciscan convert St. George the Martyr – Petrovaradin, followed by The Church of Snežna Gospa in Tekije – Petrovaradin.*

**Keywords:** Analytical hierarchy process (AHP), Roman-Catholic sacral objects, Novi Sad, Petrovaradin, Sremska Kamenica.

## Introduction

In its turbulent history of almost four centuries, the city of Novi Sad has attracted in different time periods numerous ethnic and religious groups, who sought in it peace and safety. A spiritual mission of former inhabitants began long ago, before new era. Even today, that mission of all the present confessions is not complete. Due to that, “towers, domes, crosses

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and Star of Bethlehem” proudly dominate the present city and represent semiological mediums where vertical, heavenly and ulterior axes cross with horizontal, earthly and transparent ones thus creating metaesthetic layers and historical sediments of multiconfessionality and multinationality. With even more courage, just like “holy mountains”, graves and tombs of famous people from Novi Sad conquer the city cemeteries. Seeking eternal life, they tasted divine attributes of soul and made a step closer to the Heaven and the God. All these holy places spread one unique message: “This is the city that belongs to all of its residents and beneficent visitors. People who live here are all cosmopolites who whole heartedly welcome and accept every Homo turisticus religiosus, i.e. a tourist believer despite the race, nation and religion he or she belongs to” (Stančić, 2005; Stamenković & Lazić, 2012).

Because of its geopolitical and tourist location and because of its ethnic composition, Novi Sad is known as one cosmopolitan city that grew to become the place of gathering and dialogue of many nations, cultures and religious communities. No matter if they are believers, agnostics, atheists, pilgrims, city tourists, travelling through or are the inhabitants, young, middle-aged or retired, all beneficent people can find here all the necessary information written on the account of rich religious and historical sources (Stamenković, Stojanović, Ivkov-Džigurski, 2009; Stamenković, Plavša & Vujičić, 2009; Vujičić, Besermenji & Stamenković, 2010; Stamenković, Ivkov-Džigurski & Vujičić, 2010). Novi Sad inspired visitors to explore some of the sacral objects, memorial site or some of the localities (cemetery, space where churches and grave places used to be).

One’s motivation apart from cultural and education needs might as well be directed towards the spiritual need:

- To participate in religious festivals and services where prayers for good health are read;
- To experience the spontaneous meeting with the holy place;
- To respect the saint who the holy place is dedicated to, to bow to the relics expecting a practical effect (healing);
- To overcome ontological self dissatisfaction and reexamine the boundaries of Your own being;
- To fulfill gnoseological emptiness wishing to learn something new and useful and enrich Your knowledge;
- To talk to yourself and experience sublime experiences (divinisation and spirituality);
- To acquire God’s virtues (modesty, generosity, moral wisdom, philanthropy, mercy, abstinence, humility, tolerance...) by understanding and accepting God’s and church rules (Stamenković, 2003a; Stamenković, 2003b; Stamenković, 2003c; Stamenković, 2005a; Stamenković, 2005b; Stamenković, 2006; Stamenković, 2007; Stamenković, 2009).

## Sacred Roman-Catholic churches in Novi Sad municipality

Novi Sad municipality has over 70 sacred buildings and sites. Moreover, the subject of this paper is the tourist valorization of the eight most attractive Roman-Catholic sacred objects in Novi Sad, Petrovaradin and Sremska Kamenica. Travel agencies specialized for travel arrangements and tours that organize visits to sacred city objects and city cemeteries or graves of famous people have been opened throughout the world for already several decades. This form of tourist movement is today known as: religious, missionary, pilgrimage, spiritual tourism etc. When we talk about the visits to the graves, the following names appear: memo-

rial, mortuary, dark, sensational tourism etc (Besermenji, Pivac, Blešić & Stamenković, 2013; Đorđević, Stamenković, Lazić & Pivac, 2014). In order to motivate the travel agencies of Novi Sad, we will present the most important sacred buildings. A list of most attractive Roman-Catholic sacred objects:

1. The Name of Mary Church with Catholic churchyard and Vicarage – Novi Sad;
2. The Church of Snežna Gospa in Tekije – Petrovaradin;
3. The Franciscan convert St. George the Martyr – Petrovaradin;
4. The Discovery of the Holy Cross – Sremska Kamenica;
5. The Church of St. Elisabeth – Novi Sad;
6. The Church of St. Rocco – Novi Sad;
7. The Exaltation of the Holy Cross – Petrovaradin;
8. The Church of St. Rocco – Petrovaradin.

### Sacred Roman-Catholic churches in Novi Sad

Roman Catholic church *the Name of Mary Church* is located on the Square of Liberty in the centre of Novi Sad. The first Catholic church and office of the Catholic community in Novi Sad from the first decades of 18<sup>th</sup> century was a modest, temporary building built in 1719 on the place of today's rectory and was destroyed in 1742. A new church was built on the same place and was consecrated by Catholic archbishop *Gabor Patačić* that same year. After the Turks conquered Belgrade in 1739, a lot of wealthy Catholics inhabited Novi Sad who all donated money for the building of the church. During bombing, on 12 June 1849, the church was set on fire and its tower was destroyed.

In the restoration to followed, the original tower was not reconstructed entirely. The Catholic population from Novi Sad did not like the new look and initiated in the city government the construction of the new one that shall suit Novi Sad, being the free royal town. The most experienced architect *George Molnar* made the plans in 1892 and the old church was destroyed in the same year. As soon as November 1893, building executives *Stefan Gusek* and *Karl Lerer* under the supervision of the main architect, finish the construction part of the project. A consecrated gilt cross was placed on the tower in October 1894. The tower is 72 m high, the church is 52 m long and 23 m wide, the height of the roof is 21 m and as such is the biggest Catholic church. The church is entered through massive, folding portal, above which is the coat of arms in relief with the inscription "*Crux amo-re*" (The cross of love). There are four altars in the church. The main one is to be seen in the apse where there is a big picture of the *Mother of God* with Hungarian kings and Saints *Istvan* (Stefan) and *Laszlo* (Ladislav). God the Father is engraved in the wood with evangelists and Bible motives beneath. Left from the apse is the altar *The Resurrection of Jesus* with the wooden figures of St. Peter and St. Paul. The third altar is dedicated to *St. Florian*, the patron saint of firefighters with wooden figures of St. Emeric and St. Elisabeth and the picture of the Holy Family. The fourth altar is placed under the choir and is dedicated to the *Grave of Jesus* with figures of four angels. Sculptures on all the altars are colorful or are made using the technique of marblization. The bust of the architect *George Molnar* can be seen under the choir in the shallow niche. He worked together with craftsmen and artists from Budapest, Timisoara, Subotica as well as from Tyrol. However, he mostly worked with craftsmen from Novi Sad: bricklayer *Karl Lerer*, stonemason *Johan Soman*, joiners *Matijas Draž* and *Filip Jaus*, sculptor *Gustav Frajhtner*, locksmith *Leopold Bernold*, glass artist *Laps Vurst*, carpenters *Stefan Gusek* and *Karl Bek*, painters *Franc Stajin* and *Ilija Vincens*, roof tiler *Jozef Klajnček*, moulder *Emerik Dicgen*, lightning conductor constructor

*Johan Huk*, electrician *Franc Vic* and others. Organs were placed by *Gerb Riger Jagerdorf* from Schlesien while the artistic fretwork was performed by *Ferdinand Štufleser* from Tyrol. The church is often misnamed “cathedral” which it is not because the cathedral is to be found in the centre of the Diocese and the seat of Bačka Diocese is in Subotica. The church is the classical neo gothic building with all the elements characteristic for this style: high spiky tower, numerous towers higher than the roof, walls bolstered by flying buttresses, crossed ceilings and breaches on arches and window frames. A true pearl are stained glass windows devoted to Catholic saints, works of Czech and Hungarian craftsmen, art of Tyrol cutters and Zsolnay ceramics used for roof tiling. All these characteristics contribute greatly to ambience and urban values of the old city centre. Religious masses are held regularly in the church, and lately concerts of religious music (Hozak, 2008; Imerovski, 2007; Janković, 2003; Konevović, Ćiraković & Radovanov, 2006; Puškar 2008).

This Roman-Catholic **Church of St. Rocco** was built in 1801 in Biedermeier style on the place of the chapel bearing the same name that was destroyed one year before. It is located in 9 Futoška Street (a bit before Electrical Engineering School or former Big Hungarian Grammar School) and its services were attended by Catholics who lived in the suburbs – *Discreet temple in the greenery of Futoška Street*. It was not very destroyed during 1849 bombing but was restored according to the project of the architect *Teodor Seft*. When the new the Name of Mary Church was built, the cemetery was moved from the centre of the town to the area next to the Church of St. Rocco. Elementary Catholic School was also opened here. The church has 100 seats, choir balcony and organ from 1879 that was made by *Adam Kajlbah* from Novi Sad and that is considered to be artistically the most valuable one in all churches in Novi Sad. A Catholic reading club was opened in 1902 and was visited regularly by Germans and Hungarians from neighbouring parts of the town. The church was the home of a rich cultural life with dilettante theater and sport associations (Stančić, 2005; Stamenković & Lazić, 2012).

**The most important and intimate urban ambience in the centre of Novi Sad – Catholic churchyard** – The building of the Catholic Vicarage or the Parish House was built in 1808 in the Catholic churchyard (on the left of the church). Today it represents a unique example of classicist rule with the elements of baroque. It was designed by *Georg Efinger*. On the board above the door, the name of the architect and the year are engraved in Latin. Vicarage is a two-floor building that is divided into two same parts by a hallway in the ground floor. Facade is done in a so-called “copf” classicist style while the high and steep roof is characteristic for baroque constructions. During 200 years of its existence, nothing was added or taken from it, which together with its style and architecture contributes to its rarity and puts it on the list of protected cultural property of great importance. Catholic churchyard, like a small paved square, is surrounded by Catholic church, Vicarage and “Vatican” palace. On the one side it is connected with Mite Ružića Street and with The Square of Liberty on the other side. Passage leads to Zmaj Jovina Street. Catholic churchyard is recognized as stylish and subtle part of the city centre. “Vatican” Palace is a grand building in the Catholic churchyard built in 1930s. It bears that name because it belonged to Roman Catholic municipality. Once, when there was still no today’s church, there was a small Catholic church with a cemetery next to it. The cemetery was later moved. Today, the churchyard is one of the most beautiful city squares closed for traffic and with benches, fountain and greenery.

In autumn 1926 and with the approval of Bishop *Budanović Lajcso*, a competition was opened for the building of the Roman-Catholic church in “*Darányi-telep*” **Church of St. Elisabeth**. The church was intended to be used primarily by Hungarian population who inhabited this suburb between two world wars (11Ćirila i Metodija Street). In 1930, it was decid-

ed that the church will be built according to the project of *Mihail Plavec* from Bački Petrovac, the structure being one of his most significant achievements. Construction works were performed by *Ajger Karlo* and *Ökrész Andras* from Novi Sad. Church is distinguished by bright red bricks in combination with white plastered surfaces. Composition showing *St. Elisabeth* of Hungary feeding hungry children is one of the most valuable ones in the church. Being the daughter of Hungarian *King Andras II (Andrew II of Hungary)*, she married very young when she was only 14, had three children, became a widow and devoted herself to asceticism and helping the poor and miserable. Literally exhausted from benefaction, she died at the age of 24. Organs in the church were made in 1906 by *Angszter Imre* and *József* in Pecs (Geokarta, 2006; Stojaković, 2002; Grupa autora, 2002; Grupa autora, 2003; Grupa autora, 2004; Grupa autora, 2006; Grupa autora, 2010).

**Franciscan Monastery of St. John Capistano** is located in Cara Dušana Street 4. The object dates back to 1938 and was used as a dwelling building. It was restored to serve religious purposes in 1942. There are 160 seats but the church can accommodate up to 260 people. Apart from the church itself, the complex comprises a convert, printing house and ancillary structures (Stančić, 2005; Stamenković & Lazić, 2012).

### Sacred Roman-Catholic churches in Petrovaradin

The oldest church in Petrovaradin and **the Franciscan convert St. George the Martyr** is located in the old baroque lower town beneath the Petrovaradin Fortress. The building of this church is connected with the coming of Jesuits after the fleeing of the Turks at the end of the 17th century. The church was built in the period between 1701 and 1714 when it was sanctified. The church is a one-naval building that is 35.72 meters long and 15.45 meters wide. There are 100 seats in it and it is used as a concert hall in summer months. The front is decorated by the statues of St. Francis Xavier, St. John of Nepomuk, relief with the picture of the Mother of God, cross and the plate of the Croatian King Tomislav. One aisle of the convert was finished in 1719 while the whole complex was completed in 1734. The statue of St. Ignatius, the founder of the Society of Jesus i.e. Jesuits, can be seen in the semicircular niche on the outer facade. The inside of the church and five altars are made even more beautiful by superb carving and the organ made in 1830. The plate telling about the visit of the emperor Franz Joseph to this church in 1852 is located in the main altar. Regent Aleksandar Karadorđević was an honorable guests to this church in 1919. The church was built to resemble the main Jesuit church “*II Gesu*” in Rome. Former milky white facade was damaged in the period between 1941 and 1961 when the railway tracks went through Štrosmajerova Street and the soot was constantly falling on the church and neighboring facades. A big altar painting, a work of Vienna painter *Feliks Iva Lajhner*, showing saint and Roman soldier St. George (patron of knights and soldiers) dominates the inside of the church. There are two crypts in the church that were used for burying Jesuits, generals and rulers of the town and the Fortress such as *Kristijan L. E. Vulfen*, emperor officer, *Nikola Ćirovića*, secret advisor of emperor Franz and general *Theodor Hainrich von Nekem*, commanding officer of the Fortress and builder of military buildings in today’s lower town (Stančić, 2005; Stamenković & Lazić, 2012).

The old Roman-Catholic church of **the Exaltation of the Holy Cross** (also sometimes known as “Ljudevit dol”) is located between today’s Arčibalda Rajsa Street and 21 Koste Nada Street. After the coming of the Jesuits and the building of the convent of St. George in the lower town, the whole Petrovaradin was under the governance of one parish. The church was governed by the Jesuits until 1777 when two other parishes were established: Exaltation of the

Holy Cross and St. Rocco. Present church was built in the same place in 1812. Statues of St. Jerome and St. Cecilia were erected in 1925 on the right and left of the main entrance. Organ is placed on the balcony of the church while the whole inside is painted in pleasant pastel colors (Geokarta, 2006; Stojaković, 2002; Grupa autora, 2002; Grupa autora, 2003; Grupa autora, 2004; Grupa autora, 2006; Grupa autora, 2010).

Roman-Catholic temple *the Church of St. Rocco* is located in the part of Petrovaradin called “Novi Majur”, 160 Preradovićeve Street. It is a classicist church built in 1808. It is believed that the church existed at that place even before that period because the parish was founded in 1777. The whole documentation about the early history of this church was burnt in the Hungarian Revolution of 1849 during the conflict of Hungarian revolutionists and squads of Serbs and Croats led by *Josip Jelačić*. The inside of the church was painted by the painter *Pavle Ružička* in 1945. Organ in the church dates back to 1929. Church is the starting point of the old Way of the Cross that led all the way to Calvary, or the underground chapel symbolizing the Golgotha hill and Tomb of Jesus. Calvary was designed and built in 1772 by *Franciskus de Paul Manet*. Today, the church is rather neglected and became useless after rapid urbanization so the new the Way of the Cross was built in Tekije. Three crucifixions were placed above the chapel and they remind us of Golgotha, the site of Jesus’ crucifixion. The middle crucifixion was destroyed during 1990s while the two remaining ones stand damaged still today (Stančić, 2005; Stamenković & Lazić, 2012).

Roman-Catholic sanctity *the Church of Snežna Gospa in Tekije* is located at the end of Petrovaradin, on the road to Sremski Karlovci, about one kilometer from the church of St. Rocco. It is a renowned Christian and ecumenical sanctity which is attended by Protestants, Catholics and even Orthodox Christians on the 5<sup>th</sup> of August (the day of Snežna Gospa) in the memory of the joint victory over Turks. There is one interesting legend about the “Varadin War”. There was a terrible storm that caused low morning temperatures and even snow. Prince Eugen Savojski took advantage of the weather and at night approached the Turks from behind the ice. A small chapel without a tower, devoted to Virgin Mary, stood on the place of the present church in the period between 13<sup>th</sup> and 16<sup>th</sup> century. It was founded by the members of *Citeaux* order was destroyed by the Turks. The history of the church is not known and there are no available and reliable data. When the Turks conquered Petrovaradin Fortress on 28<sup>th</sup> July 1526, Petrovaradin became the seat of Turkish leaders and nobles. The Turks erected here a wooden mosque with minaret and house for two dervishes, which in the Arabic language is known as “tekija” or resting place (in the broader sense of Muslim sanctities). Muslims used to erect such small monasteries next to water sources. One of two sources that existed at Tekije in those days is still located 150 meters from the church in the valley. When the Turks fled, Petrovaradin was inhabited by the Jesuits in the period between 1687 and 1693. Since they didn’t have a church in the town, they asked cardinal *Kolonić* to give them the mosque which they later converted into the chapel of *Mary’s Immaculate Conception*. First extension of the chapel was performed in such a way that it was converted into sacristy while the front was enlarged for about 4 meters. Jesuits did not organize processions exclusively on the day of *Snežna Gospa* but in other occasions as well. Thus, the citizens of Petrovaradin made pilgrimage on 5<sup>th</sup> November 1739 praying for plague to miss them. A present church with two towers in neo-gothic style was built in 1881, after the initiative of abbot *Ilija Okrugić Sremac* and after the approval of Bishop *Štrosmajer* and as designed by the architect from Zagreb *Herman Bole*. Two new neo-gothic bells were erected while the old Turkish mosque that was used as a sacristy was destroyed and a new dome with a tower was built. Both a cross and a half-moon were placed on the last dome, indicating that this praying house alter-

nately belonged to two different religions: Christian and Muslim. *Ilija Okrugić Sremac*, born in Sremski Karlovci and a school mate of a Serbian poet *Branko Radičević* was buried in the foundations of the church in 1897. He was the bearer of Serbian and Montenegrin Medal of Honor and received the title of the abbot of St. Dimitrije the Martyr from the *Bishop of Đakovo*. The place where he rests is on the left side right next to the church, the tomb is covered with a marble plate with craved cross and with the inscription „*Ilija Okrugić, abbot*” in front of it. This church was restored in 1976. The works were performed by the famous architect *Antun Drk*. Colored stained glass ornaments were done by Milan Stanišić from Sombor. The copy of the icon of St. Marija Snežna can be seen in the church. The original of this icon is in the Roman church of *Santa Maria Maggiore* (Geokarta, 2006; Stojaković, 2002; Grupa autora, 2002; Grupa autora, 2003; Grupa autora, 2004; Grupa autora, 2006; Grupa autora, 2010).

### Sacred Roman-Catholic church in Sremska Kamenica

The Catholic Church of *the Discovery of the Holy Cross* is located on the central square in Sremska Kamenica. It was built in 1811 on the place of the old church in the style that reflects the harmonious combination of neo-baroque (tower) and classicism. The temple is rather simple and of small dimensions. A residential house was later built right next to the church base. There is a big cross in the beautiful garden and three sculptures on pedestals next to it (Stančić, 2005; Stamenković & Lazić, 2012).

## Literature review

The fact that AHP is one of the top MCDM tools lead to its application in the tourism and hospitality field of research also: Fabac and Zver (2011) used AHP for developing formula for future tourist orientation of a region. Ngamsomsuke et al. (2011) examined the importance of sustainable cultural heritage tourism indicators. Huang et al. (2012) proposed an evaluation index system of e-tourism supply chain based on AHP. Papic-Blagojevic et al. (2011) used AHP with purpose of defining tourists' preferences. Wickramasinghe and Takano (2009) used AHP on SWOT analysis elements, trying to capture their importance and use it for strategic marketing. Yaolin (2006) used AHP for conservation strategy for China's cultural heritage conservation. Park and Yoon (2011) mixed Delphi and AHP with purpose of developing sustainable rural tourism evaluation indicators. Chen (2006) used AHP method for convention site selection. Lai and Vinh (2013) applied AHP in the investigation of tourism promotional effectiveness. Tsaur and Wang (2007) proposed an evaluation of sustainable tourism development by using a combination of AHP and fuzzy set theory. Curry and Moutinho (1992) used it when dealing with environmental issues in tourism management. Deng et al. (2002) introduced the AHP method in the evaluation of natural attractions for tourism. Chen and Peiji (2009) proposed an evaluation on exploitation potential of cultural tourism resources based on AHP. Hsu et al. (2013) developed a model that evaluates and selects vendors of customer relationship management system for the medical tourism industry using AHP and Delphi method. Many researchers used AHP and applied it on wide variety of indicators with purpose to develop new models for tourism and hospitality research. Furthermore they mixed it with other methods, such as SWOT, fuzzy, GIS and with that developed new models.

## Methodology

When it comes to complex decisions, which involve a lot of criteria and alternatives, decision-making becomes a complex process which contains a number of interrelated and interdependent factors, which can more or less influence the final decision (Jandrić and Srdević, 2000).

The AHP approach, developed by Saaty (1980), is reputed to be one of the most commercially available DSS (Decision Support Systems), as well as one of the most extensively used MCDM (multi criteria decision making) methods. This method represents a “qualitative” technique that relies on the judgment and experience of the decision makers. AHP is used to construct an evaluation model and it has criterion weights. Applying it usually results in simplifying a multiple criterion problem by decomposing it into a multilevel hierarchical structure (Harker and Vargas 1987).

The goal is at the top of the hierarchy, while the criteria, sub-criteria and alternatives are on the levels and sub-levels of the hierarchy. In this paper the analyzed cultural assets in Novi Sad, Petrovaradin and Sremska Kamenica represent alternatives while indicators of the quantitative-qualitative method of assessment of cultural sites are used as criteria, which were developed by Tomka (1994):

1. Microlocation and accessibility – vicinity to tourist emissive places, vicinity to main communication factors (road, airport, river etc.) and accessibility.
2. Artistic value – Historical importance, rarity, monumentality etc.
3. Scenic/Aesthetic – Nearby nature, ambient, fitting in the surrounding area etc.
4. Tourist Infrastructure – functional and additional tourism objects (parking space, toilets, interpretive panels etc.)
5. Tourist Appeal – number of visitors, appeal to tourist etc.
6. Fitting in with other tourist assets in the vicinity – Evaluation of other natural and cultural assets in the vicinity (Figure 1).

AHP gradually compares alternatives according to chosen criterion and measures their impact on the goal, which helps man to make the right decision (Saaty, 1980).

**The Concept of AHP** – The AHP approach is used to construct an evaluation model and it has criterion weights. It integrates different measures into a single overall score for ranking

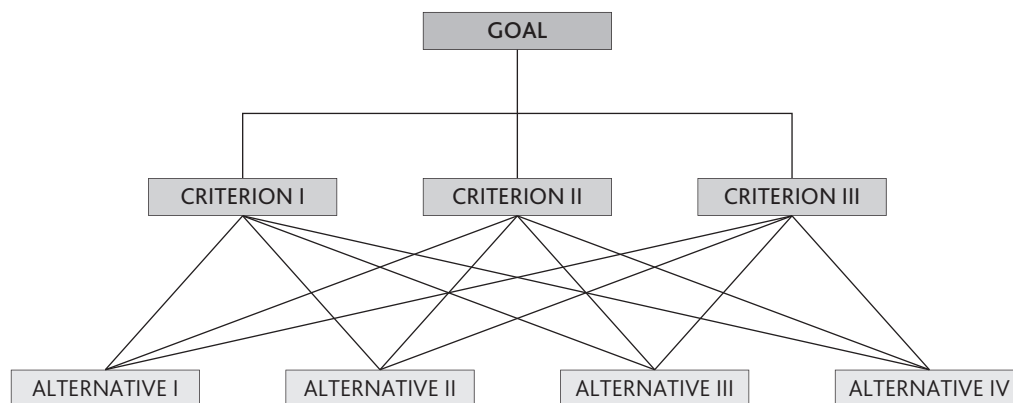


Figure 1. The application of hierarchy in AHP



decision alternatives. Applying it usually results in simplifying a multiple criterion problem by decomposing it into a multilevel hierarchical structure (Harker and Vargas, 1987).

The goal is at the top of the hierarchy, while the criteria, sub-criteria and alternatives are on the levels and sub-levels of the hierarchy (Figure 2). AHP gradually compares alternatives and measures their impact on the goal, which helps man to make the right decision (Saaty, 1980).

When the hierarchical model of the problem is established, the decision maker can compare the elements in pairs at each level of the hierarchy with the element in the higher level of the hierarchy. For decision makers, the criterion weights represent a measure of the relative importance of the elements (Jandrić and Srđević, 2000).

To calculate the weights of n elements, by the comparison of the two elements, the Saaty's scale (Table 1) is used:

$$S = \left\{ \frac{1}{9}, \frac{1}{8}, \frac{1}{7}, \frac{1}{6}, \frac{1}{5}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, 1, 2, 3, 4, 5, 6, 7, 8, 9 \right\}$$

**Table 1.** Saaty's scale of relative importance of the factors

Intensity of relative importance	Definition	Explanation
1	<i>Equal importance</i>	Two elements contribute equally to the objective
3	<i>Moderate importance</i>	Experience or judgment slightly favor one over the other element
5	<i>Essential or strong importance</i>	Experience or judgment strongly favor one over the other element
7	<i>Demonstrated importance</i>	Experience or judgment very strongly favor one over the other element, and it's importance is demonstrated in practice
9	<i>Absolute or extreme importance</i>	The evidence favoring one element over another is of the highest possible validity
2, 4, 6, 8	<i>Intermediate values</i>	Compromise is needed

The result of the comparison of the element i and y is placed in matrix A in the position:

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdot & \cdot & a_{1n} \\ a_{21} & a_{22} & \cdot & \cdot & a_{2n} \\ \cdot & & & & \cdot \\ \cdot & & & & \cdot \\ a_{n1} & a_{n2} & & & a_{nn} \end{pmatrix}$$

The reciprocal value of the results of the comparison is placed on the position  $a_{yi}$  to preserve the consistency of the judgment. The decision maker compares n elements using Saaty's scale (Table 2) and places the results in matrix A (Jandrić and Srđević, 2000).

**Mathematical Basis of the AHP method** – According to Alphonse (1997), in a “perfect world” the matrix A, where the results of the comparison are placed in, would be the same as the following matrix:

$$X = \begin{pmatrix} \frac{w_1}{w_1} & \frac{w_1}{w_2} & \dots & \frac{w_1}{w_n} \\ \frac{w_2}{w_1} & \frac{w_2}{w_2} & \dots & \frac{w_2}{w_n} \\ \frac{w_3}{w_1} & \frac{w_3}{w_2} & \dots & \frac{w_3}{w_n} \\ \dots & \dots & \dots & \dots \\ \frac{w_n}{w_1} & \frac{w_n}{w_2} & \dots & \frac{w_n}{w_n} \end{pmatrix}$$

where  $w_i$  is the relative criterion weight of the element  $i$ .

One of the techniques for determining the vector of criterion weights  $\{w_j\}$ , which is also recommended by Saaty (1992), includes the summary of the rows of the matrix which contains results of comparing and normalizing the obtained sum, because:

$$\sum_{j=1}^n \frac{w_i}{w_j} = w_i \left( \sum_{j=1}^n \frac{1}{w_j} \right) \quad i=1, \dots, n \text{ (by rows)}$$

Vector of criterion weights  $\{w_j\}$  can also be obtained by normalization of the reciprocal value of the sum of the column, because:

$$\sum_{i=1}^n \frac{w_i}{w_j} = \frac{1}{w_j} \left( \sum_{i=1}^n w_i \right) \quad j=1, \dots, n \text{ (by columns)}$$

It should also be noted that the normalized geometric mean of the rows of the matrix also provides a vector of relative criterion weights,  $\{w_j\}$ . The vector of criterion weights is then multiplied by criterion weight of the element from the higher level, which was used as a criterion for comparison.

This procedure is repeated from the beginning as we go down to the lower levels of the hierarchy. The weight factors are calculated for each element at the given level, and they are then used to determine the so-called composite relative criterion weights of the elements at the lower levels. In the end, the alternative with the highest composite criterion weight is chosen.

**Consistency** – If there were a possibility to accurately determine the value of criterion weights of all the elements that are compared to each other at the given level of the hierarchy, the eigenvalues of the matrix would be completely consistent. Redundancy of the pairwise comparison makes AHP less sensitive to judgment errors. This model also provides an opportunity to measure the errors in judgment by calculating the index of consistency for the obtained matrix of comparison, after which the ratio of the consistency itself can be measured.

First the consistency index (CI) is calculated according to the formula:

$$CI = \frac{\lambda_{\max} - n}{(n-1)}$$

where  $\lambda_{\max}$  is the maximum eigenvalue of the matrix of comparison. The closer  $\lambda_{\max}$  is to the number  $n$ , the smaller the inconsistency will be.

At the end the ratio of consistency (*CR*) can be calculated from the ratio of the consistency index (*CI*) and the random index (*RI*):

$$CR = \frac{CI}{RI}$$

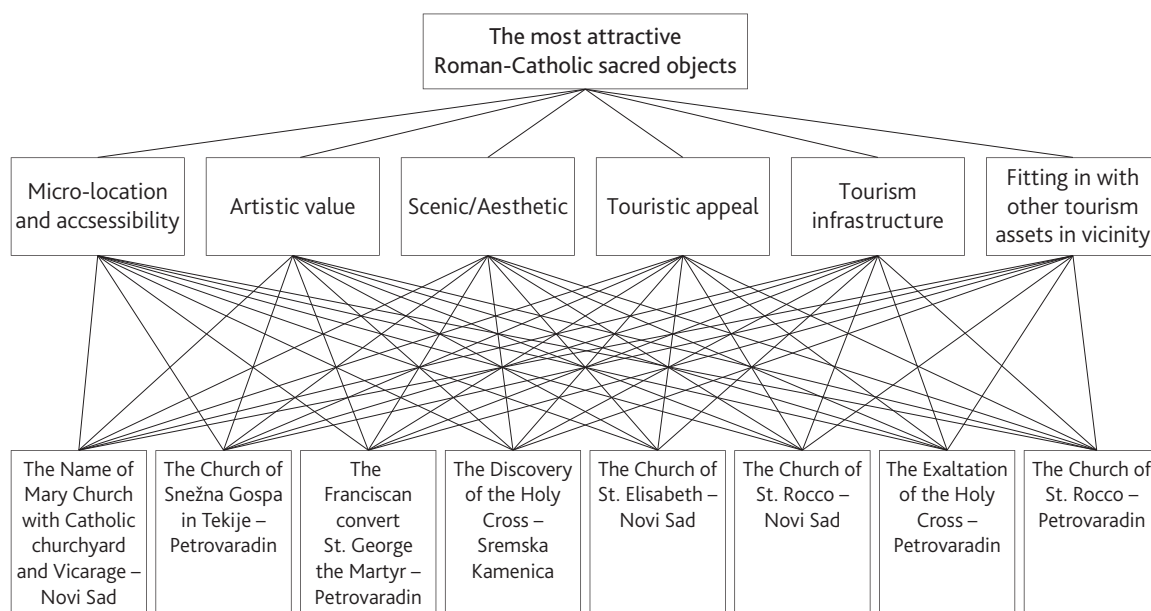
The random index (*RI*) depends on the row of the matrix (Table 3), where the first row represents the row of the matrix, and the other one represents the random index (details on how to generate random indexes are given in Saaty (1980)).

**Table 2.** Random index (Saaty, 1980)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0.0	0.0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.48	1.56	1.57	1.59

If the consistency ratio (*CR*) is less than 0.10, the result is sufficiently accurate and there is no need for adjustments in comparison or for repeating the calculation. If the ratio of consistency is greater than 0.10, the results should be re-analyzed to determine the reasons for inconsistencies, to remove them by partial repetition of the pairwise comparison, and if repeating the procedure in several steps does not lead to the reduction of the consistency to the tolerable limit of 0.10, all results should be discarded and the whole procedure should be repeated from the beginning (Jandrić and Srđević, 2000).

**Research phases** – The first phase of this research was the selection of the most representative Roman-catholic sacral objects of Novi Sad, Petrovaradin and Sremska Kamenica. In the next phase experts in the field of tourism were asked to grade the indicators of the quantitative-qualitative method of assessment and according to them grade the alternatives (Roman-catholic sacral objects). Obtained data was then entered into the “Expert Choice 2000” statistical software. Next phase was the establishment of consistency of the deci-



**Figure 2.** Goal, criteria and alternatives in the AHP hierarchy

sion-making process by which authors derived ranks between alternatives and criteria, as well as their weight values. Based on the obtained results (Figure 2) researchers got the clear picture which objects are most attractive and which are the least attractive.

**Sampling profile** – The survey was conducted during the September 2014. At first, there were 9 potential experts, but two of them had high CR ratio and were excluded from the research. 32 potential respondents were chosen to participate in this research. The final results of the research were based on the analysis of 7 expert's opinions. Most of the experts had long experience in the field of tourism, heritage conservation etc.

**Questionnaire design** – The conducted survey was in the form of an interview. The respondents were asked to express their preferences (using Saaty's scale) between cultural sites comparing each site with another one (Figure 2). The criteria used for the comparison consists of the basic elements of quantitative-qualitative analysis (Figure 2). In the questionnaire, respondents compared all of these cultural sites separately for each criterion. Due to the fact that the feedback from all of the respondents was satisfying, the survey was considered to be clear and adequate for this research.

## Results and discussion

For the purpose of this research the hierarchy model was made by software "Expert Choice 2000". Expert Choice is decision-making software that is based on multi-criteria decision making and it implements the Analytic Hierarchy Process (AHP). Created by Thomas Saaty and Ernest Forman in 1983, the software is supplied by Expert Choice Inc.

In Figure 3 the evaluation of the criterion weights, more precisely their ranking according to their importance is shown.

The ranking of the criterion weights (Figure 4) clearly shows that the microlocation and accessibility have the highest criterion weight, which indicates the great importance of the

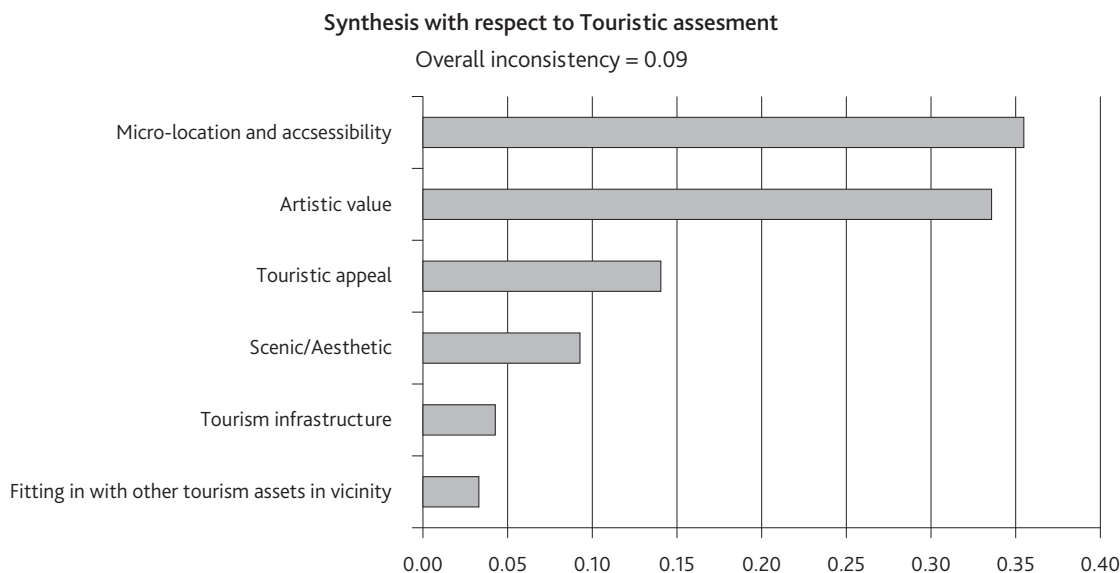
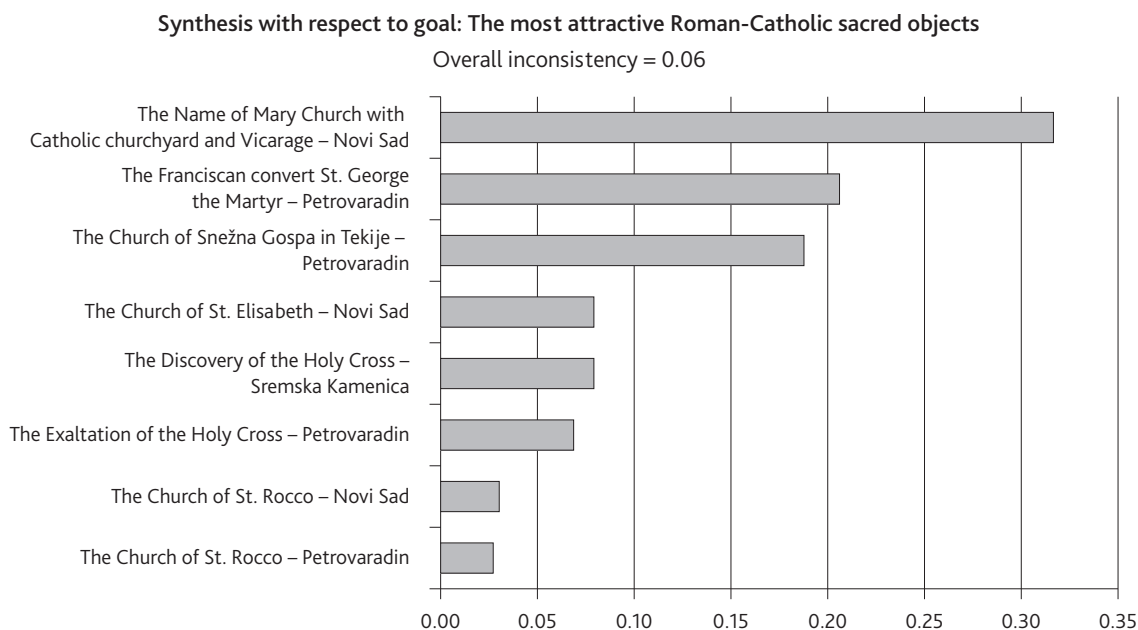


Figure 3. The ranking of criterion weight for Touristic assessment



**Figure 4.** The results of the cultural sites assessment

location, signalization and accessibility of sacred objects, in terms of their tourist attractiveness. The other criteria are ranked according to their importance as it is shown in figure 4.

The fact that the consistency ratio (*CR*) is 0.09 indicates that the result is accurate enough and there is no need for adjustments in the comparison.

From the results of the assessment of the analyzed sacred objects (Figure 5), The Name of Mary Church with Catholic churchyard and Vicarage – Novi Sad is ranked as the most attractive site. Then, in second place is the Franciscan convert St. George the Martyr – Petrovaradin, followed by The Church of Snežna Gospa in Tekije – Petrovaradin, The Church of St. Elisabeth – Novi Sad, The Discovery of the Holy Cross – Sremska Kamenica, The Exaltation of the Holy Cross – Petrovaradin, The Church of St. Rocco – Novi Sad and the sacred object with the lowest ranking is The Church of St. Rocco – Petrovaradin, which is considered to be the least attractive site.

There are a lot of reasons to claim that The Name of Mary Church with Catholic churchyard and Vicarage is the biggest tourist attraction among numerous in area of Novi Sad municipality. This church is situated in a favourable location, in the city center, just a few meters from other hot touristic spots in the city of Novi Sad and many other attractions. The church is easily accessible so it's pretty easy to find. The church is the classical neo gothic building with all the elements characteristic for this style: high spiky tower, numerous towers higher than the roof, walls bolstered by flying buttresses, crossed ceilings and breaches on arches and window frames. A true pearl are stained glass windows devoted to Catholic saints, works of Czech and Hungarian craftsmen, art of Tyrol cutters and Zsolnay ceramics used for roof tiling. All these characteristics contribute greatly to ambience and urban values of the old city centre.

The second biggest tourist attraction the Franciscan convert St. George the Martyr – Petrovaradin. It is located in the old baroque lower town beneath the Petrovaradin Fortress (which consists of a number of old streets with interesting buildings). There are two crypts

in the church that were used for burying Jesuits, generals and rulers of the town and the Fortress such as Kristijan L. E. Vulfen, emperor officer, Nikola Ćirovića, secret advisor of emperor Franz and general Theodor Hainrich von Nekem, commanding officer of the Fortress and builder of military buildings in today's lower town. The accessibility is very good near the main stairs to the Fortress.

Third position belongs to the Roman-Catholic sanctity the Church of Snežna Gospa in Tekije which is located at the end of Petrovaradin, on the road to Sremski Karlovci, about one kilometer from the church of St. Rocco. It is a renowned Christian and ecumenical sanctity which is attended by Protestants, Catholics and even Orthodox Christians on the 5th of August (the day of Snežna Gospa) in the memory of the joint victory over Turks. There is one interesting legend about the "Varadin War". Due to the fact that it is situated on the slopes of Fruska gora mountain, it is also easily accessible with parking places near the main regional road. There is a good signalization which indicates the direction that leads to the site, it can easily be found. This monument has a great artistic value which lies in the fact that it is a symbol of the victory of the Christians against the Turks.

Other five Roman-Catholic churches should try to develop their tourist attractions. In that process the main stakeholders should be travel agencies, associations of tourist guides, tourist organizations and of course the priests and church communities.

The consistency ratio (*CR*) is 0.06 which shows that the results are accurate enough and there is no need for adjustments in comparison or for the repetition of research (Figure 5).

## Conclusion

The city of Novi Sad has attracted in different time periods numerous ethnic and religious groups, who sought in it peace and safety. The city has great potential for the development of various forms of religious tourism and pilgrimage sites. There is assumption that the impact on local economy and social and cultural life would be greater if temples and other cultural and religious sites would represent a complementary tourist offer. Future affirmation of cultural and religious tourism as one of the basic types of tourism requires a lot of investments and planning in this area, as well as concerted effort of many stakeholders. Moreover, the promotion of cultural heritage is on an unenviable level, as there are many attractive temples and sites about which tourists and even some locals are totally uninformed.

The obtained results give us a clear picture of the current situation regarding cultural sacred sites in these three settlements. They show us which church should receive the most attention and be the primary focus of future cultural and religious tourism development. By the ranking of criterion weights in terms of their importance, we got the most significant criterions in the evaluation of the sacred sites. According to the results this is certainly the microlocation and accessibility criterion which is followed by artistic value. In addition, the results of the assessment show that most of these sites have a favourable location and very significant artistic value which indicates their immense potential for their tourism activation. This refers to low investments in infrastructure and signalization as well as restoration and conservation of the objects which have changed their former appearance over time.

By combining the AHP method with quantitative-qualitative method of evaluation for cultural heritage we managed to identify three objects with the greatest tourism potential – The Name of Mary Church with Catholic churchyard and Vicarage – Novi Sad; The Church of Snežna Gospa in Tekije – Petrovaradin and The Franciscan convert St. George the Mar-

tyr – Petrovaradin as the basic religious attractions. The results of this research help us realize where the gap is and show us the weaknesses of other sites which should be turned into their strengths. The other five sites – The Discovery of the Holy Cross – Sremska Kamenica; The Church of St. Elisabeth – Novi Sad; The Church of St. Rocco – Novi Sad; The Exaltation of the Holy Cross – Petrovaradin and The Church of St. Rocco – Petrovaradin are still not in the perfect state for their involvement into the tourist offer, and this paper also indicates the major fields for their improvements. Moreover, priority fields of their improvements should be connected with the assessment of the importance of criteria used for their evaluation. In this way, by good cooperation of the government and other tourist organizations, as well as with the endorsement of the local community, the tourism based on sacral objects could prosper and be mutually beneficial.

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