Metropolitan pole of Hellinikon – Agios Kosmas: Hierarchization of interventions with the use of the Maximum Difference (MaxDiff) Scaling method

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Abstract. The research work seeks to analyze and hierarchize the interventions which have been proposed for the Hellinikon – Agios Kosmas metropolitan pole through the use of the Maximum Difference (MaxDiff) Scaling method.

1 Introduction

The redevelopment of Hellinikon will be the largest urban regeneration in Europe, designed to add significant new investment and land uses in tourism, culture, entrepreneurship, innovation, and the environment. It is a diversity of developments that aims to resurrect Greece by baptizing it as the dominant tourist choice worldwide [1].

The key estimated information that has been made public after the final study stage is as follows:
• Total area: 6,200,000 m² [2].
• Total estimated investment cost: 8 billion euros [3].
• Total estimated benefit for the Greek State: 14 billion euros [4].
• Estimated profit of the Greek State due to taxes: two (2) billion annually [4].
• Total job offers: 75,000 new jobs [4].
• Expected tourist attraction: 1,000,000 annually [4].

This paper deals with the study of the plan for the regeneration of the Hellinikon – Agios Kosmas metropolitan pole. The area has gone through many phases in the previous century; however, for 20 years, a plan to redevelop the area of the former airport in Hellinikon and the Olympic coastal zone of Agios Kosmas Attica (metropolitan pole of Hellinikon – Agios Kosmas) had been under consultation, and recently the construction works have started.

More specifically, there is an investment proposal with the ultimate goal of local economic development as well as the aesthetic upgrade of the wider coastal area.

The main idea of the project is defined by the following:
• Opening and expansion of the metropolitan green and recreation park to the public after its construction.
• Hindering future overbuilding and corresponding uses.
• Diffusion of benefits throughout the Attica.

The utilization of the space is proposed to include a comprehensive Diffusion and Redistribution Program of the benefits from its development throughout the Athens metropolitan area, with an emphasis on the most degraded and densely built urban areas. In fact, it has been proposed that the investment be included in the spirit of Law 4062/2012, formulated as a goal: “the return to the wider metropolitan complex of the capital of green spaces and recreation.”

Currently, the project has been approved and is being implemented, which concerns the construction of various infrastructures with the ultimate goal of upgrading the area. However, various questions are raised regarding the actual contribution of the project to the local community, the legality of the entire investment, and its potential environmental impact. Thus, the reactions of the archaeologists, the doubts of the citizens, and the disputes between the involved stakeholders led to a long delay in the start of the work.
Nevertheless, the implementation of the project of the metropolitan pole Hellinikon – Agios Kosmas investment has recently started aiming to be fully completed within a 25-year horizon.

This paper aims to examine the interventions that are to take place in the Hellinikon area. After all the interventions were studied one by one from the perspective of the manufacturer on the one hand and from that of the public on the other, the interventions were prioritized with the help of the Maximum Difference (MaxDiff) Scaling method in order to determine the acceptance or not of the potential constructions by the citizens and to hierarchize them according to their preferences.

The rest of the paper is structured as follows:
• In the 2nd Chapter, reference is made to the Hellinikon – Agios Kosmas metropolitan pole and, specifically, to the history of the area, the vision, the strategic goals, the expected profitability of the project, the phases of implementation, as well as the criticism of the plans.
• In the 3rd Chapter, the MaxDiff method, specifically its value, methodology, and application in the present subject, are presented.
• In the 4th Chapter, the results obtained from the application of the MaxDiff method are listed.
• In the 5th Chapter, the discussion and conclusions derived from the results are presented.

2 Hellinikon – Agios Kosmas metropolitan pole

2.1 Historical review

Elliniko is a municipal unit of the Municipality of Argyroupoli – Elliniko of the South Sector of Athens in the Region of Attica. Its total area amounts to 7.5 km², of which 5.5 km² belonged to the old Ellinikon International Airport (the names Hellinikon, Elliniko, and Ellinikon will be used interchangeably depending on the most common use for each case). It consists of Sourmeni, Ano Elliniko, Kato Elliniko (Agios Kosmas), and the district of Agia Paraskevi. Vouliagmenis Avenue, the facilities of the two airports as well as the area of the bases, divide the former Municipality of Elliniko into four districts [5-6].

In 1922, refugees from Sourmeni of Pontos settled in the northern area of the Municipality. In 1925, the Ministry of Agriculture gave lots of exchangeable land of 1.25 acres each. This provision had specific conditions: in Kato Elliniko, the condition for the establishment was the declaration that the resident would undertake to excavate his plot, fence, and garden. These conditions could only be fulfilled by the most affluent of the time, with the result that the area was inhabited by merchants, shipowners, and wealthy and literate people who came from Smyrna, Pontus, and Constantinople. In 1928, compensation for the exchangeable properties was given, and several stone houses were built. In the same year, a public well was opened on Iasonidou Street that upgraded the water-supplied area of Elliniko [6].

In 1937, with the construction of Vouliagmeni Avenue, the first bus line to the center of Athens was established, sealing the area’s importance.

In 1943, with the German Occupation, the order was given to evacuate the area to make it into a virtual airport so that the facilities would not be bombed. The bombings added to the devastation and desolation.

However, in 1945 the area was reconstituted as the Community of Hellinikon [6].

From 1938 to 2001, at first one, then two, and from 1970 three airports operated in Elliniko: the Athens Airport of the same name or East, the Domestic Airport or West, and the military airport of the American base that also served the Greek air base of Elliniko, after its closure in 2001, the airports remained closed as the new Athens International Airport “Eleftherios Venizelos” is currently the main airport of Athens [6].

2.2 Decisions timeline

• 1996: First filing of plans for the construction of a music center, an aquarium, a concert hall, museums, as well as the undergrounding of part of Poseidonos Avenue. Objective: Business exploitation with the construction of business premises and hotels on an area of approximately 225 acres while maintaining an area of approximately 1,000 acres as green space [7].
• 2001: Aviation activity is transferred to Athens International Airport “Eleftherios Venizelos” in the center of the Region of Attica [8].
• 2003: The Ministry holds an international competition won by the French architects David Serero, Elena Fernandez, and Philippe Coignet, together with the architect Styliani Daouti. Goal: Total area of green spaces of 1,625 acres with the undergrounding of Poseidonos Avenue and the unification of Elliniko with the beach of Agios Kosmas, the creation of dozens of kilometers of hiking, cycling, and horse-riding paths, tree planting, and the preservation of only 41 of the 419 buildings in Elliniko. The project would be self-financed, with an area of 250 acres granted to private individuals, of which 75 would be redeveloped with commercial, residential, and public buildings to finance the construction and maintenance of the project. It was estimated that the first works could start as early as 2008 [7, 9].
• 2010-2011: The Spanish architect Jose Acebillo begins negotiations with Qatar’s State Investment Authority [10]. Establishment of a public limited company under the name “Elliniko SA” to undertake the overall package of utilization of Hellinikon and the investment program of the Public-Private Partnership (PPP) [11]. Objective: Convert 72% of the airport area to green, 15% to roads, and 12% to built-up part for residential use (about 6,500 houses for 15,000 inhabitants) and construction of business offices and government buildings, university campus, shopping and convention center, greenhouse, photovoltaic park, museum, and hotel. The building factor was proposed to be from 0.3 to 0.5, and the total area of buildings in Elliniko (existing and new) would be 2-3 million m² [12-13].
• 2012: International Bidding with the participation of nine (9) companies from Greece, Israel, the USA, Cyprus, the United Kingdom, Spain, and Qatar [14]. Voting of a bill after which the “Elliniko SA” receives an additional 106.5 acres of the Agios Kosmas Sports Center and 132 acres of the sailing center (marina) of Agios Kosmas, in addition to the 1,312 acres of Elliniko area that the company already owned (total area of approximately 1,551 acres). Objective: Public and open green spaces will cover a total of 60% of the total area, building coverage will constitute 20% of the total area, traffic roads 20%, and the average height of the buildings will be 3.5 floors. In terms of land use, in addition to green spaces, residential, tourism-leisure, sports, business, and theme parks, shopping centers, casinos, religious places, offices, banks, and educational and exhibition spaces were foreseen [15].

• 2013: The Qatari Real Estate Investment Company withdraws from the tender [16]. The Ministry of Infrastructure also formally removes the airport in Elliniko as an aviation facility [17].

• 2014: Lamda Development SA is declared a preferred investor: The company’s final offer to purchase 100% of the shares of “Elliniko SA” amounted to 915 million euros (higher by approximately 300 million euros than the initial offer). The total amount to be paid by the company amounts to 2.1 billion euros: 915 million euros for the acquisition of the shares of “Elliniko SA” and 1.25 billion euros over a decade for the development of the metropolitan park and utility infrastructure [18].

• 2015-2019: Delays in the Hellinikon investment related to legal appeals, involvement of the archaeological services, and delay in the licensing of the casino and the relocation of public bodies to another site [19].

• 2019: Issuance by the Central Administration Council of the last of the four (4) Joint Ministerial Decisions (JMA) required for the approval of the urban planning studies to start the implementation of the project [20].

2.3 Lamda Development SA

Lamda Development SA, listed on the main market of the Athens Stock Exchange, is a holding company specializing in the development, investment, and management of real estate. Currently, the company’s real estate portfolio includes The Mall Athens, Golden Hall, Mediterranean Cosmos, office buildings, innovative residential complexes, and the Marina Flisvos on the Athenian Riviera [21].

In 2014, Lamda Development SA signed a contract with the Greek State to acquire the shares of “Elliniko SA.” The Hellinikon project is one of Europe’s largest urban regeneration projects and the largest in Greece, with the total investment estimated to reach 8 billion euros over the next 15-20 years [22].

During the first five-year phase, Lamda Development SA has committed to implement, either itself or through partnerships / joint ventures with third-party investors, investments amounting to 1.5 billion euros. The estimated total investment in this particular project in the hotel sector amounts to 300 million euros [22].

The Lamda Development SA, in the frame of the metropolitan pole of Hellinikon – Agios Kosmas project, collaborates with specialized engineering companies and experts in the field, such as the following [23]:

- Master Planner: Foster & Partners.
- Landscape architect: Charles Anderson & Doxiadis+.
- Technical consultant: Ove Arup.
- Studies coordinator: Office of Alexandros N. Topazis.
- Urban studies: Envico SA.
- Consulting engineers: TEKEM SA, PRC SA, & DENCO SA.
- Transportation consultants: DENCO Ltd.
- Other consultants: Archaeologists, Geologists [23]

2.4 Strategic vision (Fig. 1)

2.4.1 Complex sports facilities

The sports facilities aim to be a pole of attraction not only for professional athletes and clubs but also for those visiting the Metropolitan Park. Indoor and outdoor basketball, soccer, golf courts, and swimming pools will offer a complete sports experience. The area will be surrounded by the lake of the former Canoe-Kayak [24].

2.4.2 New urban and business center

The new urban and business center will have a mix of new uses. Educational institutions, student housing campuses, international health and research institutions, and a model business park will aim to highlight the project as a destination for education, research, and entrepreneurship. In addition, recreational and commercial uses will be included: the largest shopping center in Attica (72,000 m²), hypermarkets, a hotel complex, and residential areas [24-25].

In particular, three (3) main buildings will characterize it as a destination [24]:
1. Office Tower (science and research institutions).
2. The Shopping Center.
3. The Hotel next to the shopping center [24].

2.4.3 Metropolitan Park Multipurpose Center

The Metropolitan Park Multipurpose Center with the Observation Tower will be an important landmark and one of the most popular destinations hosting various large-scale events [24].

2.4.4 Transport networks

The area will have a direct connection with the neighboring Municipalities, creating a continuity in the urban fabric. Extensive networks of pedestrian paths 2.5 km long and 50 km long, and 56 m long cycle paths will be created that will connect Vouliagmenis Avenue with the park, the sea, and the marina. Also, the design of the project will consider the existing infrastructure and provide the appropriate public transport (buses, trams, metro) for the access of its visitors [26].
2.4.5 Marina

The new sandy beach, with free access for all, between the Marina and the Beach Village, will be approximately 1 km long and 50 m wide on average. It will be directly connected to the Metropolitan Park through the main pedestrian promenade and cycle paths and easily accessible by tram, bus, and car [27].

Furthermore, a world-class aquarium and a state-of-the-art marina with 308 berths will be built on it, reconstructing the image of the Athenian Riviera [28].

Next, the development of a commercial zone with luxury shops, dining, and entertainment areas with an estimated construction area of approximately 20,000 m² is planned on the land area of the marina [27].

At the same time, two (2) luxury hotels (5 stars) with a capacity of 300 and 175 rooms will be constructed, as well as a yacht club. In addition, the construction of a seaside residential tower is planned in an area with pure residential uses adjacent to the Agios Kosmas Marina, with a permitted height of up to 200 m above sea level and a maximum estimated building area of approximately 45,000 m². This building will have an unlimited view of the Marina and the Aegean as well as the Metropolitan Park and the broader landscape of the city of Athens, while it will be a landmark of the area. In total, the length of the coastline will reach 3.5 km [27].

2.4.6 Integrated Resort Casino (IRC)

The high-rise complex will include a 5-star hotel (60,000 m²), casino facilities (12,000 m²), conference and exhibition facilities (12,000 m²), as well as an indoor performance area (arena) with at least 3,000 seats. It will be located behind the Marina hotel and offer direct access to the beach via the pedestrian bridge that will cross Posidonas Avenue [27].

2.4.7 Exhibition Hall

Many of the buildings, which have been declared as preserved, will acquire a new identity. The historic “Saarinen” building of the former airport’s east terminal will be converted into an exhibition center, and the historic hangars will be converted into aviation museums. Furthermore, the Sculpture Park, with its hilly relief and large-scale sculptures, will adorn the area, while the Olympic Square and various themed gardens will offer unique experiences to visitors.

Finally, the cape of Agios Kosmas, with its church, upon its completion, will be one of the most important attractions in the area [27].

2.4.8 Metropolitan Park

The Metropolitan Park, a green oasis of more than 2,000,000 m², will extend from the beachfront to Vouliagmenis Avenue while connecting Alimos with Glyfada and Argyroupoli and Elliniko with the sea. Essentially, it will be a core connecting the seafront with Hymettus, with access being achieved around the perimeter from various entry points that will connect the project to the neighboring Municipalities and the broader urban fabric. In this way, the open nature of the park will be ensured. Of course, the entrances will be strategically placed, on the extension of central arteries, at key points of connections with metro, tram, and bus stations as appropriate [27].

It should be noted that it will be larger than London’s Hyde Park (1,420,000 m²) and much larger than other Greek parks, such as the Tritsis Park (1,000,000 m²), Syngrou Estate (950,000 m²), Field of Ares Park (270,000 m²) and the National Garden (160,000 m²). In fact, its area is estimated to be twice that of Monaco [29]. The nature of the park will be completed with the presence of tributaries and wetland landscapes [27].

2.4.9 Housing around the park

In Hellinikon, approximately 10,000 houses with a total area of 1,000,000 m² will be built, which will accommodate 24,500 permanent residents. The neighborhoods will have different names, each with its own character and distinct role [30].

Specifically, the areas will be divided as described below:

• Olympic Aviation Neighborhood: Residential area in the northeast of the area bordered by Posidonas Avenue, which will have an area of 321,400 m² and is estimated to be inhabited by 3,486 people. Buildings up to 50 m will be allowed in the four (4) building blocks that will “face” towards the inside of the park [31].

• Western neighborhood of the park: A residential area with a maximum construction of 416,700 m² that will “encircle” the current residential “strip” along Poseidonos Avenue with open sports facilities [31].

• Eastern neighborhood of the park: One of the gates of Hellinikon will be located there, leading to a large underground parking area right next to the “Saarinen” building. It will occupy an area of 318,000 m², of which 161,000 m² will be shared and public spaces for the inhabitants and visitors [31].

• Neighborhood of the business center: Area-residential receptor with a purely hyperlocal and multifunctional character which will occupy an area of 675,000 m². It will include a tram depot, shopping, offices, and a skyscraper [31].

• Neighboring the hill: Area behind the urban center of Vouliagmeni, between Hassani Hill and the three (3) preserved Air Force hangars. It will have mainly residences within an area of 162,800 m² [31].

• Neighborhood of Trachona: Residential area defined by the Trachona stream under reconstruction. It will have an area equal to 11 building blocks and a maximum construction area of 161,400 m² [31].

• Neighborhood of Agios Kosmas: The “fillet” of the Hellinikon area of 300,000 m², of which half is shared and public spaces, with a “face” to the sea. It will include pure residential areas on an area of 43,000 m², a skyscraper (200 m), the sailing center, and the Marina, while it is estimated to have a population of 2,048 inhabitants [31].
2.5 Implementation phases

- The implementation phases of the project are as follows:
  - Phase 1: Construction of the main office complex
  - Phase 2: Construction of residential towers
  - Phase 3: Construction of commercial buildings

2.6 Criticism

- There is currently no other similar mega project in the world to the extent of Hellinikon.
- The concept of total investment of €8 billion is considered an excessive amount, and the project has been delayed due to various issues.
- The project aims more at the regeneration of an area that is currently abandoned, rather than creating a new, vibrant urban center.

Fig. 1. Masterplan: Total investment: €8 billion

Fig. 2. Planning Strategy First Phase
3 Methodology

The questionnaire was developed using the MaxDiff approach to statistical analysis but only a statistical analysis.

Table 1. MaxDiff results.

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<td>Pedestrian and cycle paths</td>
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<td>Metropolitan Park</td>
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<td>Exhibition space</td>
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<td>New railway and road network</td>
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Fig. 4. A numerical scale
5 Discussion and Conclusions

The Ellinikon project has been a source of controversy, with different stakeholders having varying goals. Despite the significant investments made in the project, some concerns have been raised regarding the sustainability and environmental impact of the development. The project’s vision is to transform a historical site into a modern, green park, which could potentially regenerate the Athenian Riviera and create thousands of jobs. However, the implementation of the project has been slow, and there have been delays in the completion of the first phase projects.

In conclusion, the Hellinikon project seems to be a megaproject according to its nature, scale business projects, and hierarchy of the goals. The project was planned to create benefits for the economy, attract people, and generate revenue for Greece. However, it seems that the project was planned without adequate advertisement for Greece indeed, the redevelopment of the old Hellinikon made the bulldozer more evident, and it appears that the press was interested more on its immediate open 10,000 jobs. Nevertheless, it seems that the project was planned for the few wealthy visitors and people view them as the less preferable.

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