

Using the Analytical Hierarchy Method (AHP) in Arranging and Selecting Investment Projects Field Study STAAR Company - Tlemcen-

استخدام أسلوب التسلسل الهرمي التحليلي (AHP) في ترتيب واختيار المشاريع الاستثمارية

دراسة ميدانية شركة STAAR - تلمسان-

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Received: 02/01/2025

Accepted: 30/03/2025

Published: 31/03/2025

Abstract:

This research aims to identify the use of a hierarchical analysis method (AHP) as a scientific model and curriculum based on multi-standard methods In selecting investment projects (alternatives) to achieve the study's objectives, the main criteria for choosing the best site for the production of "Psalt", from six alternatives were identified, drawing on data provided by STAAR Tlemcen State and on outputs from Expert Choice (2011 version) specially designed for multi-standard methods. The study selected the site area standard as the best standard of 41.9% in terms of importance, and the Mashreya site as the best alternative to project accommodation at 34%.

Keywords: project selection. Multi-standard analysis. Decision-making. Hierarchical Analysis (AHP).

JEL Classification: C61, M15.

ملخص:

يهدف هذا البحث إلى التعرف على استخدام أسلوب التحليل الهرمي (AHP) كنموذج علمي ومنهج يعتمد على أساليب متعددة المعايير في اختيار المشاريع الاستثمارية (البدايل) لتحقيق أهداف الدراسة، تم تحديد المعايير الرئيسية لاختيار أفضل موقع لإنتاج "الزفت"، من بين ستة بدائل، بالاستعانة بالبيانات المقدمة من قبل STAAR ولاية تلمسان وعلى مخرجات Expert Choice (نسخة 2011) المصممة خصيصاً للأساليب متعددة المعايير. وقد اختارت الدراسة معيار

مساحة الموقع كأفضل معيار بنسبة 41.9٪ من حيث الأهمية، وموقع مشرية كأفضل بديل لإيواء المشروع بنسبة 34٪.

الكلمات المفتاحية: اختيار المشروع. التحليل متعدد المعايير. اتخاذ القرار. التحليل الهرمي (AHP).

تصنيف: JEL: C61, M15.

INTRODUCTION:

Enterprises in their choice of projects must reconcile "The speed of decision-making on one hand, and the reduction of risks on the other hand, because the decision and risk success are indivisible and inseparable elements And so when making decisions to choose projects, the leader must take into account and read the future well, Built on scientific foundations, accurate and modern in line with developments in its financial and competitive environment, In addition to relying on the expertise component, which itself contributes to reducing errors and risks and therefore the decision maker has to quantify and quantify available alternatives (qualitatively), this succeeds only by introducing modern, scientific and accurate methods and methods based on objectivity and inclusivity, as well as flexibility in decision-making to cope with changes and transformations occurring at home in particular or at the international level in general.

In order to complete this paper, the following problem must be answered:

How far can multi-standard analysis be used using the hierarchical analysis method (AHP) to select an investment project?

In order to learn about the multiple aspects of this problem, we should have addressed the sub-questions that we will try to answer through this research:

- *What is the meaning of a multi-standard resolution?
- *What are the QTY methods to solve the project selection problem?
- * How do we solve the problem of choosing a project location using the hierarchical analysis method (AHP)?

- Hypotheses:

To address this issue, the following hypotheses have been formed:

- *Given the multiplicity of goals that decision makers want to achieve from a location, quantitative methods, especially the hierarchical analysis method (AHP), must be used.
- * AHP is the best way and a comprehensive and integrated framework to rationalize decision makers for site differentiation (alternatives).

- Objectives of the study:

This paper aims to achieve the following objectives:

- *Learn about the quantitative methods for". choosing the project site.
- *Finding criteria the factors that influence the decision to choose a project location..
- * Solving the problem of choosing the project location using the hierarchical analysis method (AHP).

- Study Limits:

This study is limited to STAAR, which settles the construction and paving of roads and is based in Tlemsan. The study will apply to STAAR and, in particular, "To choose a factory for the production of Psalt as the location for this company."

- Research curriculum:

The approach taken in this study is a quantitative analytical approach that is suitable for the problem at hand. We worked on identifying quantitative methods that help to choose the project location and applied the hierarchical analysis method (AHP) to choose the best location.

In order to learn about the multiple aspects of this problem, we should have addressed the sub-questions to which we will try to answer through the following axes:

- 1- Previous studies.**
- 2- What is the decision and methodology of the multi-standard method.**
- 3- Application of field study:.**

1- Previous studies:

**** Study: Abdelkader Boumaza and others (2013), Entitled: " Application of the Analytic Hierarchy Process for Selecting a Location for a Sauce Production Factory. "**

Through this study, the researcher addressed the application of the hierarchical analysis method, which is considered one of the multi-criteria evaluation techniques. methods in which it addressed the problem of choosing a site for the production of psalm in an Algerian institution for the preparation and paving of STAAR roads, The researcher provided a theoretical explanation of the method used, in addition to reviewing the various methods of its application. In the latter, he addressed the problem of trade-offs between available locations consisting of four (4) alternatives, To choose the best alternative based on five (5) main criteria of site space Land Ownership, Proximity to Main Road, Population Dimension, Sales The "size matrix" relies on a pairwise comparison matrix between the main criteria and a pairwise comparison matrix among the alternatives related to the main criteria., the following results were achieved:

- Select Mashreya as the best site offers a 37% discount compared to other sites, taking into account... the above criteria.
- Pyramid Analysis and Problem Solving Method fits as demonstrated by its success in all studies because of its flexibility and ease of application.

****Study: LAHRACHE Tahar et KHEDACHE Fares, Title: Practicing Multi-Criteria Analysis in Managerial Decision-Making: Integrating the AHP Decision Support Method to Enhance Contractor Selection in Public Tenders.** Through this paper, researchers attempted to apply the hierarchical analysis method (AHP) as a multi-standard method, as the evaluation process and the selection of the institution's suppliers improved, so to make the choice better and more transparent, the decision-making process should be collective and consensual..

After presenting the Analytic Hierarchy Process (AHP) and determining of some public markets, the two researchers addressed the problem of supplier selection for COSIDER, as the enterprise had to choose between five (05) suppliers (alternatives), based on three (03) main criteria (cost, duration, quality) and thirteen (13) subcategories.

Based on the results of the Super Decision program, the study concluded that the best resource is for COSIDER is the Italian supplier (PV) with a preference rate of 24.28%, followed by the Italian supplier (CI) with a preference rate of 23.01%, then in third place is the Italian supplier (CG) with a rate of 22.81%, followed by the German supplier (RM) with a rate of 17.42%, and in last place is the French supplier (PH) with a rate of 12.45%.

****Study: Ahmed Ali Ahmed Al-Rashid(2011)**

Entitled: "Evaluation of opportunities for private sector participation in the completion and development of Iraq's port operations and operations using the pyramid analysis process (AHP)", field study at the State Company for Iraqi Ports.

The researcher addressed this study by combining the theory of organic structures of researchers (Stalker, Burn) with Porter's value chain analysis, with the aim of building a standard that can be used in formulating a quantitative model according to the hierarchical analysis process (AHP) as an indicator for studying and diagnosing problems of organizational structures.

The study also aimed to familiarize itself with the hierarchical analysis theory (AHP) to build quantitative entry points for decision-making, as well as to assess opportunities for the private sector to carry out Iraq's port business activities using the hierarchical analysis theory (AHP). In this study, the researcher relied on two main criteria (basic operations activities, substantive services) and on the criterion (supporting operations activities, value-added services) to differentiate between two alternatives (public and private sector). The study concluded with the results, the most notable of which are:

1/Study results are consistent with the idea (Saaty) which redefined the theory of hierarchical analysis (AHP) as the theory of building indicators.

2/The inadequacy of port management thinking constitutes an obstacle to Exploiting the capabilities of the private sector.

3/ Some basic operations are considered more important, relative importance than others, and therefore giving attention to them will give the Organization the ability to support and develop core processes.

****Study: Belhassan Mohammed et al(2017) .**

Title: An Approach to Choosing Information Systems Projects Using Analysis (AHP)

Through this paper, researchers aim to assess the quality of support provided by the hierarchical analysis method (AHP) to decisions on the selection of information systems projects, where researchers attempted to answer the following problem:

Can a multi-standard decision-making model based on the hierarchical analysis (AHP) be proposed to support Algerian public institution managers and assist them in choosing the best information systems projects? In such a way as to reduce expenses and risks, maximize cash and non-cash profits?

In response to the article's problematique, researchers have adopted a descriptive analytical approach to describe and analyse the factors influencing the selection of information systems projects in Algerian institutions, as well as to identify criteria and objectives to be taken into account in decision-making. On the other hand, The researchers relied on a case study methodology at the national level institution Sonatrak (National Research, Production, Transport, Conversion, Conversion and Marketing sion), Rto Rto the RTO TO.

On this basis, researchers drew on a hypothetical study, whereby the Sonatrak Foundation had to select five (5) of the 10 projects available to it as alternatives (ALT), based on five (5) criteria: cost, profit, anticipated risk, degree of satisfaction and time.

The results of the study also showed that:

- The selection of the sixth project as the best project by 13.73%, followed by the projects (tenth, seventh, fifth and eighth) respectively.
- Deny the first hypothesis where the study showed that decisions on the selection of projects are not subject to legal limitations, but that the decision maker has full freedom to determine the appropriate standards, tools and models.
- Demonstrate the second and third hypothesis, as the study showed that the hierarchical analysis (AHP) will be followed and relied upon as an auxiliary mathematical model a guide for the decision-making process in selecting information system projects in Algerian institutions."

2- What is the decision and methodology of the multi-standard method :

2-1- What is multi-standard decision-making:

One thinker says the decision-making process is considered the essence of management, as we see that decision-making is at the core of the administrative process and is the fundamental element in shaping the management function, reflecting decision-making as a wise process choice of strategy, action or solution, and decision-making process is a structured and rational process based on scientific foundations, free from emotions, using scientific tools, means and methods to reach an appropriate and satisfactory decision. (Bensmaine mourad , 2021.p.02)

2-1-1-The concept of decision-making:

Decision theory is defined as the science and art of administrative decision-making that addresses the foundations and rules of administrative decision-making. and principles for its formulation and follow-up implementation, based on a structured and coherent quantitative analysis of decision-making in accordance with predetermined criteria and objectives approach ", often economic criteria and objectives, and to achieve adequacy, they rely on the scientific curriculum and move away from the event and guesswork that has long prevailed as a curriculum in management decision-making. (Roy, Roy, & bouyssou, 1985)

Decision-making is also a managerial, practical and managerial function, in that it is one of the Director's responsibilities, as well as an organizational process in that many decisions are more than the Director's sole responsibility, as they are the result of the efforts of many individuals working in groups or governing bodies.. (Boumaza , 2018,p22)Drucker considers that prior to that period, administrative thought focused its attention on the study of human relations in organization, management theories, administration and economic analysis, and the activities of the manager without giving sufficient attention to the concept of decision-making. and methods of making as an essential part of the Director's work (Ayoub, 1997,p22). The resolution is also it is defined as the driving force for evaluating the final stage of the advantages of available alternatives. so that the ideals are selected for its implementation. (Taibi, 2013.p122)

2-1-2-Decision-making steps:

The decision-making process goes through several stages at each stage requiring several steps and actions, with a view to reaching sound decisions. The number of these steps and the manner in which they are arranged vary according to the thinkers. There are different classifications of the stages and steps of administrative decision-making and each classification represents a particular point of view. The following view can be taken: (Tamz & Romero, 1998 ,P23)

(Recognizer Problem),

- Set Objects,
- Under stand Problem,
- Determine Options,
- Evaluation Options,
- Choice,
- Implementation,
- Observel monitor.

2-2-Methodology of multi-standard method (AHP):

2-2-1- The concept of the AHP method.:

Hierarchical analysis process consists of three words: process, analysis and hierarchy, each of which has a special meaning (Morly, 2006,p.35):

Process: The process requires the decision-maker to clarify the criteria and determine the relative importance of each criterion, and then indicate how to evaluate the alternatives. can contribute to each standard.

*Hierarchy: It is intended to regulate the parts of the problem of a target, key criteria, partial criteria and alternatives in a hierarchical form that allows them to be well absorbed, in order to eventually reach the various weights associated with each level.

*Analysis: This method derives its strength and durability from logical thinking and mathematics.

The analysis is intended to use bilateral comparison to help decision makers express their preferences for standards and obtain digitized values understood by all.

Saaty was known in 1980 as an integrated framework that combines objective and non-objective criteria, with comparative comparisons based on a relative scale (Thomas.L. Saaty, 1980, p. 05)

2-2-2-Stages of application of hierarchical analysis method (AHP):

The pyramid analysis method is (Mareschal , 2000.p123)a scientific method developed by the researcher (Thomas Saaty), symbolized as AHP, this method is based on classifying the available alternatives for the decision, and then selecting the best one based on a set of specified criteria. criteria, the application of AHP hierarchical analysis method is carried out across several stages through target identification and problematique, which go through the following stages :

- Formulating a hierarchical structure for the project,
- Do bilateral comparison of standards by objective,
- Preparing a comparative governance matrix.
- Calculation of the priority radius
- Determining the value of the random IA index,
- Calculation of average value for λ_{max} ,
- IC coherence index calculation,
- Calculate RC coherence ratio,
- Drafting the final benchmarking table,
- Doing bilateral comparison of sub-criteria for the number of standards studied,
- Preparing the final table for comparison between the sub-criteria."
- Determining the performance of the reference value of each sub-criterion relative to the value of the criteria,
- Aggregation calculation.
- Conduct a bilateral comparison between the alternatives that were studied."
- "Preparation of the final alternatives table.
- Evaluation of the performance of reference values for each alternative for aggregation,
- Final assembly account,
- Explanation of final decision.

Pyramid construction the inverse relationship between the influencing factors in the system is demonstrated by identifying the impact of these factors at any level of the hierarchy. at the higher pyramid level (general objective), by calculating the preferential strength of each factor in the system's pyramid construction. (Vagglass, 2007,p.23).

There are also some suggestions for the construction of an elaborate pyramid ((Boumaza , 2018):

- Define the overall objective In other words, what needs to be achieved?"
- Determine the sub-objectives of the overall objective and, if necessary, also determine the time horizons affecting the decision.
- Defining the criteria necessary to achieve the sub-goals of the overall objective.
- Determine the sub-criteria for each main criterion, noting that that criterion or sub-criterion can be defined by a set of numerical values, or by verbal concepts such as: high, medium or low.
- Identification of persons involved.
- Defining the goals of these people.
- Determining the policies of the actors."
- Identifying alternatives or outcomes.
- For decisions that require a yes answer first take the preferred result, then the benefits and costs are compared if the decision is made to those results.
- Do the work of analysing boundary values.

3- Application of field study:

3-1-Problem solving using AHP hierarchical analysis method:

In order to arrange and choosing the best location for a wedding hall factory for one of the Algerian companies in Tlemcen Province, by applying the analytic hierarchy process and using it. the expert options program Expert choice and based on the company's information (Boumaza Abdelkader & others , 2013.p.08)we have:

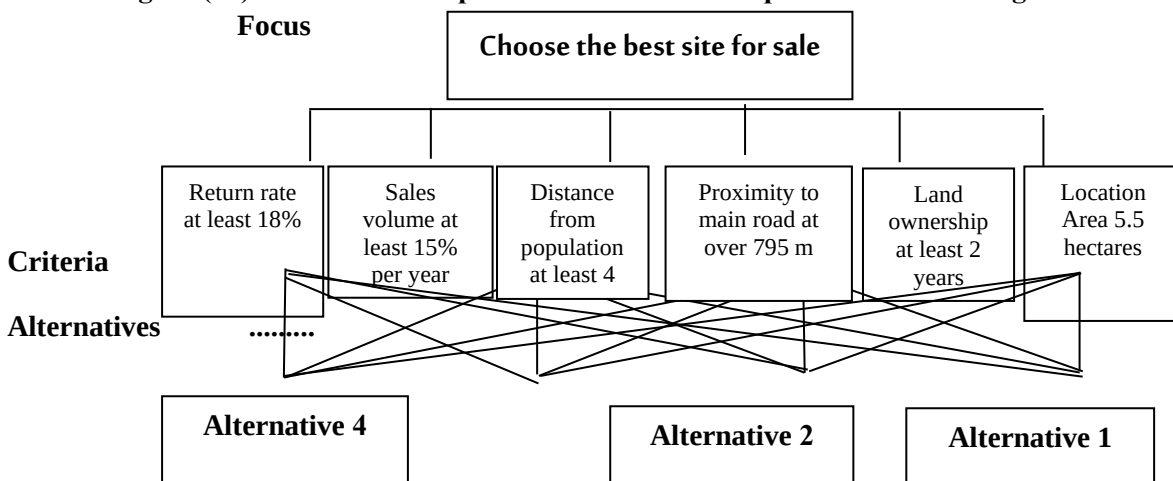
1(Zanata, 2. Memon Boys. 3) Sidi Belabas website. 4) Mashreya site.

The factors or criteria on which STAAR chooses sites are six and are as follows:

- Site area.
- Land ownership.
- Proximity to the main road.
- Distance from the population.
- Sales volume.
- Rate of return.

3-2- .Analysis of results of applied study and decision-making:

Figure (01): Hierarchical representation used in the process of evaluating alternatives.

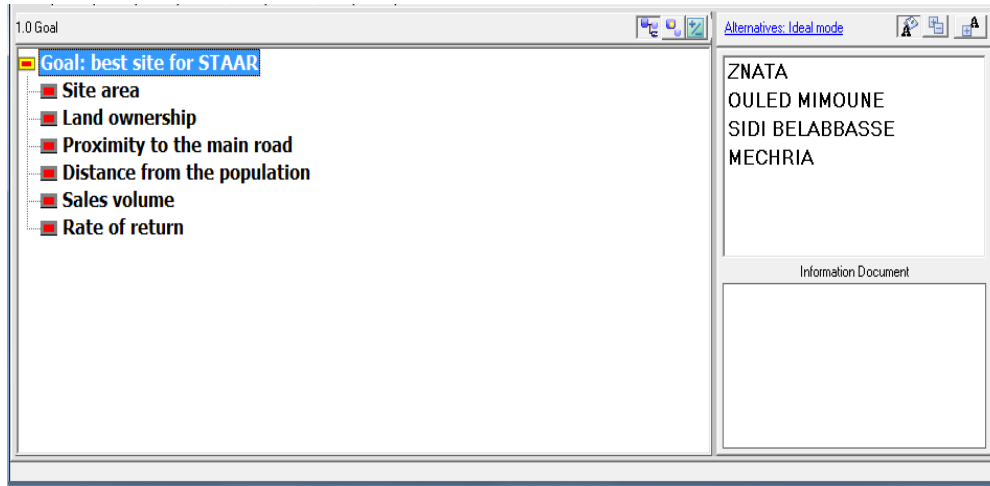


Source: The researchers prepared it based on the company owner's information

3-2-1 Organization Tree:

In this stage, all the previous data obtained through the Expert Choice program is organized. This is called a volunteer tree and is therefore new:

Figure 02: Interference tree



Source: Prepared by researchers based on Expert Choice program outputs

3-2-2- Binary comparisons between the main criteria.:

The comparison was made based on the relationship between two alternative criteria for the same problem, According to the scale of importance based on the degree of preference..

-3-2-3- Creating a decision matrix for pairwise comparisons:

The decision matrix can be extracted and represented in the following table:

Table 01: Decision matrix

Rate of return	Sales volume	the distance from the population	Proximity to the main road	Land ownership	Site area	Compare standards
2/1	3/1	7	4	4	1	Site area
2/1	2/1	2/1	5	1	4/1	Land ownership
7/1	8/1	6/1	1	5/1	4/1	proximity to main road
3	4	1	6	2	7/1	Distance from population
3	1	4/1	8	2	3	Sales volume
1	3/1	3/1	7	2	2	Rate of return

Source: Prepared by researchers based on bank information

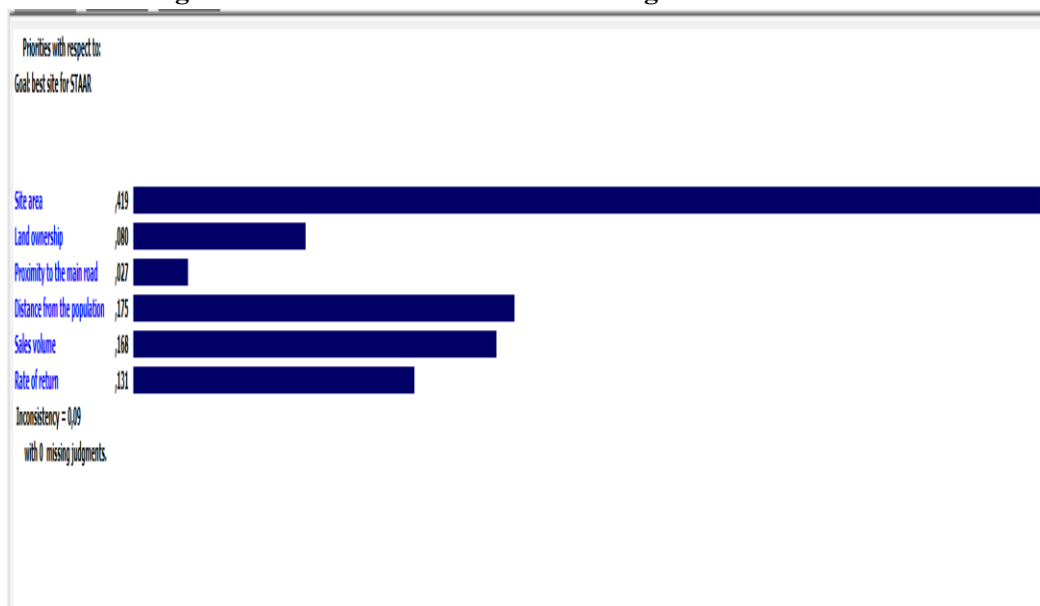
In order to consider the degree of consistency of comparisons acceptable, it is calculated where the CR must be $\leq 0,1$, after presenting the pairwise comparison matrix for the main criteria related to the primary objective. in Expert Choice, we get the following:

CR = 0.09 $\leq 0,1$ So the degree of consistency of comparisons is acceptable, which suggests that the data are not inconsistent between them.

The order of the main criteria can also be displayed according to the importance of each element relative to the objective, based on the comparisons made by the decision-maker., as will be explained in the following format:

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Figure 3: The results of the final ranking of the main criteria.



Source: Prepared by researchers based on Expert Choice outputs

Through the format we note the main criteria are arranged according to the level of risks, based on the bank data the order was as follows:

The site area is ranked first by 41.9%.

The distance from the population is second with 17.5%.

Sales volume ranked third by 16.8%.

Fourth-ranked return rate of 13.1%.

Land ownership is ranked fifth at 8%.

Proximity to the main road in the last order by 2.7%.

We also note the consistency rate of $CR=9\% \leq 10\%$, so we say that bilateral comparisons are acceptable.

3-3- Matrimonial comparison of alternatives to key criteria:

During this phase, we will compare alternatives for each The main criterion is to know the weight of each alternative in terms of its degree of importance key criterion. This will make matrimonial Comparing the importance of each of the available investment locations for the company among a set of four alternatives."

3-3-1- :Marital comparison of alternatives according to the location area criterion."

Matrimonial comparisons of alternatives to the "location area" criterion: This comparison was made based on the relationship between two alternative options for the same problem. particular criterion whether it is a main criterion or a secondary criterion, according to the relevance scale by degree of preference.

3-3-2- Creating a matrix for array comparisons between alternatives.:

The resolution matrix of the following table can be extracted:

Table 02: The matrix of pairwise comparisons between alternatives:

Mishriya Site	Sidi Belabas site	ouled Memoun site	Zanata Site	area of the site
5	1	3	1	Zanata Site
3	3/1	1	3/1	ouled Memoun site
5	1	3	1	Sidi Belabas site
1	1/5	3/1	5/1	Mishriya Site

Source: Prepared by researchers based on bank information

The degree of consistency of comparisons is considered acceptable and calculated as CR must be $\leq 0,1$ following the following steps:

- Priority beam calculation:
- Calculate the total of each column:

1	3	1	5
3/1	1	3/1	3
1	3	1	5
5/1	3/1	5/1	1
2.53	7.33	2.53	14

Divide each matrix element into the total column with average line values calculated to determine priority

				الأولوية
0.4	0.41	0.4	0.36	0.39
0.13	0.14	0.13	0.21	0.15
0.4	0.41	0.4	0.36	0.39
0.08	0.05	0.08	0.07	0.07

Consistency of provisions:

Here the self-value of λ max is calculated according to the following relationship:

$$\lambda \max = a_{ij} \cdot w_j / w_i$$

Where:

Wi: expresses contribution to the selection of the best standard

WJ: Expresses the contribution of some criteria to the main objective.

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$$\begin{bmatrix} 1 & 3 & 1 & 5 \\ 1/3 & 1 & 1/3 & 3 \\ 1 & 3 & 1 & 5 \\ 1/5 & 1/3 & 1/5 & 1 \end{bmatrix}$$

We divide the weighted total beam by the priority value:

$$\begin{bmatrix} 1,58 \\ 0,39 \\ 0,62 \\ 0,15 \\ 1,58 \\ 0,39 \\ 0,28 \\ 0,07 \end{bmatrix} = \begin{bmatrix} 4,05 \\ 4,13 \\ 4,05 \\ 4 \end{bmatrix}$$

$$\frac{4,05 + 4,13 + 4,05 + 4}{4}$$

$$\lambda \text{ max} = 4,06$$

Calculation of consistency index and consistency ratio:

This is according to Saaty's proposal for the following relationship for the number of standards n:

$$CI = \frac{\lambda \text{ max} - n}{n - 1} = \frac{4,06 - 4}{4 - 1}$$

CI=0,02

We determine the CR consistency ratio after comparing the CI value with the following random consistency indicator table values:

RI	n
0	1
0	2
0,58	3
00,9	4
1,12	5
1,24	6
1,32	7
1,41	8
4,51	9

Source: Prepared by researchers

We have the number of parameters ($n = 4$), and that's $RI = 0,9$.

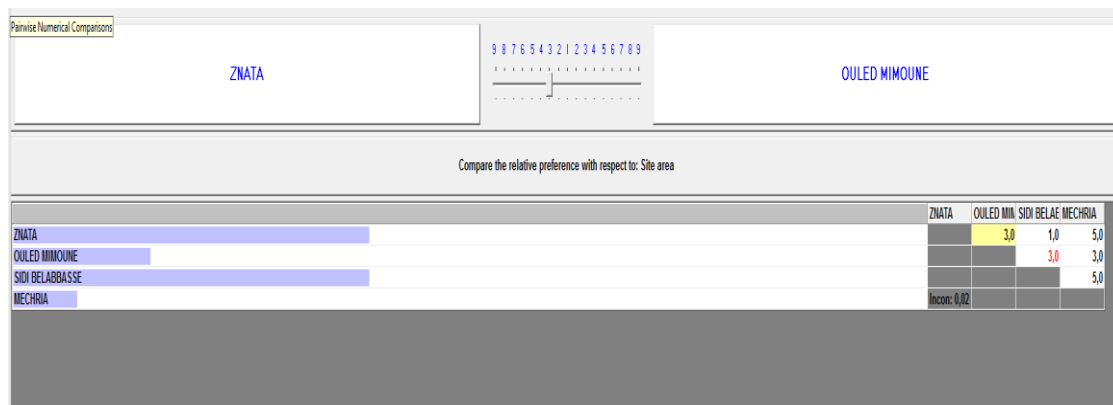
So we calculate CR where:

$$CR = CI/RI = 0,02/0,9$$

$$CR = 0,02 \leq 0,1$$

In order to consider the degree of consistency of comparisons acceptable, it is calculated where the The value of CR must be ≤ 0.1 . After that, the comparison matrix for the main criteria to achieve the main objective is presented in expert Choice, we have the following form:

Figure (4): Matrimonial comparison of alternatives in relation to the criterion-location area.

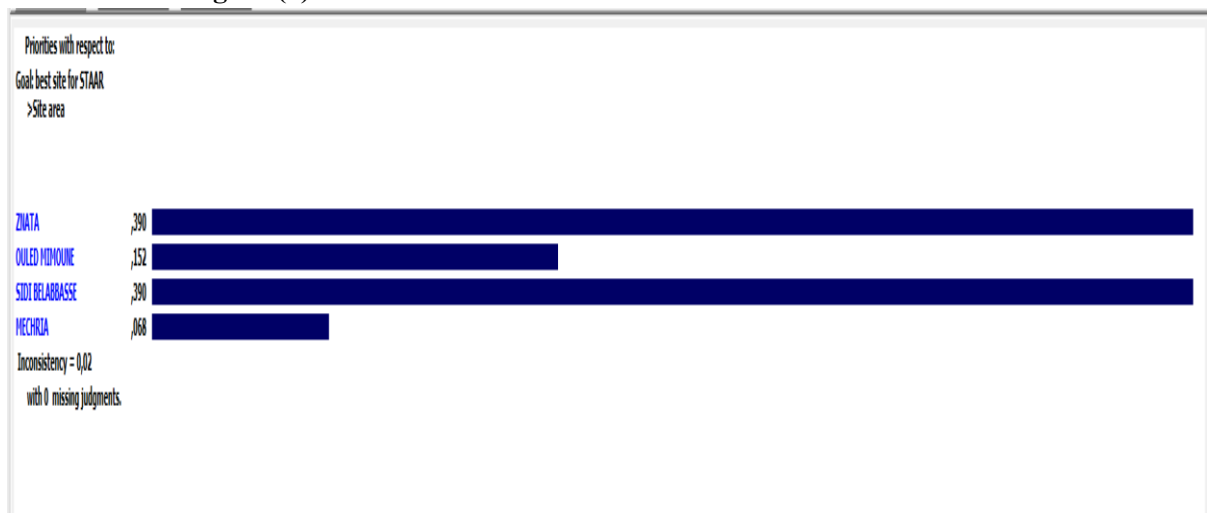


Source: Prepared by researchers based on Expert Choice outputs

So the consistency rate is $CR = 0.02$, which is the same calculated at the previous stage, which is less than 10%, which indicates that there is an acceptable degree of consistency in the matrimonial comparisons of alternatives and that the results obtained are not inconsistent.

The ranking of sites for the site swab standard can also be explained in the following format:

Figure (5): Evaluation of the results of the site area criterion."



Source: The researchers prepared it based on Expert Choice outputs

In the first order, we note that Zanata and Sidi Belabas are the best site at 39%, followed by Boys Memon at 15.2%. We also note that the last ranking was for Mashreya at 6.8%, which is the lowest percentage.

We can also clarify the decision tree in relation to the location area standard and based on Expert Choice outputs as follows:

Figure (6): Decision tree for site area standard



Source: Prepared by researchers based on Expert Choice outputs

Note:

We continue in the same way and perform pairwise comparisons between the four alternatives according to the six criteria mentioned earlier obtain the so-called "target" decision tree.

3-3-3-Arrangement of alternatives and decision-making:

To identify the highest priority alternative among the available options, we measure the weights of the six alternatives and calculate their values based on the main criteria. We also assess the feasibility of each alternative's performance value for each sub-criterion, according to the specified values for the sub-criteria related to the main objective. The following format shows the final rankings as follows:

Figure (7): Illustrates the outputs of the Best Project Location Selection Model

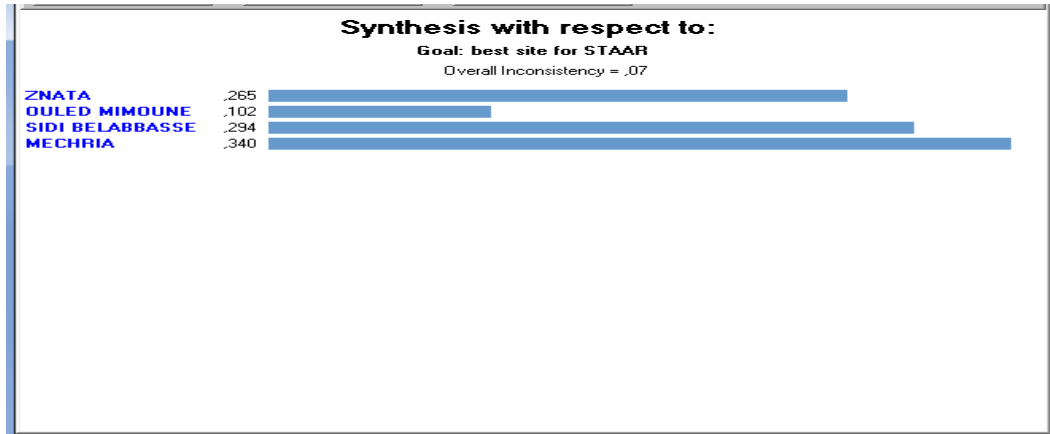


Source: Prepared by researchers based on Expert Choice outputs

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We can also determine the consistency rate, which should be less than 10% to ensure the quality of the comparison and the absence of discrepancies between the results, as shown in the following figure.

Figure 8: The final result of the selection of the best project location is illustrated.



Source: Prepared by researchers based on Expert Choice outputs

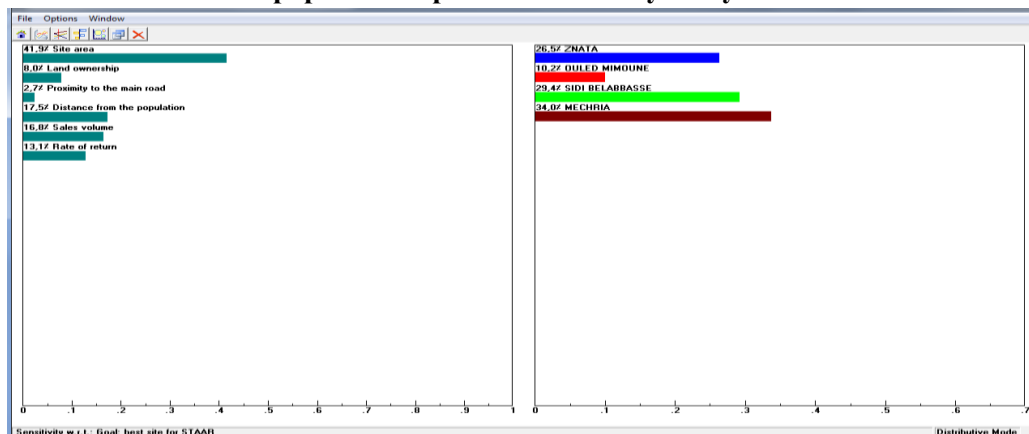
The figure shows us the following:

Mashreya site is selected as the best site with 34% at the most important percentage of the project Followed by Sidi Belabas at 29.4%, Zanata at 26.5% And in the last order, we find the Mimoun ouled site at 10.2%, Finally, we say that based on a 7% consistency rate that is smaller than 10%, results are considered to be of quality, validity and non-conflict, which shows that the degree of consistency is acceptable.

-3-3-4Sensitivity Analysis:

In this analysis, the ranking of alternatives is studied, and the impact of changing the weights of the main criteria on the decision-making process is examined according to the expert selection program. The following figure illustrates the sensitivity analysis for the fourth criterion "distance from the population" before conducting the sensitivity analysis:

Figure (9): Examination of variable sensitivity to the fourth criterion "Far from the population" prior to sensitivity analysis.

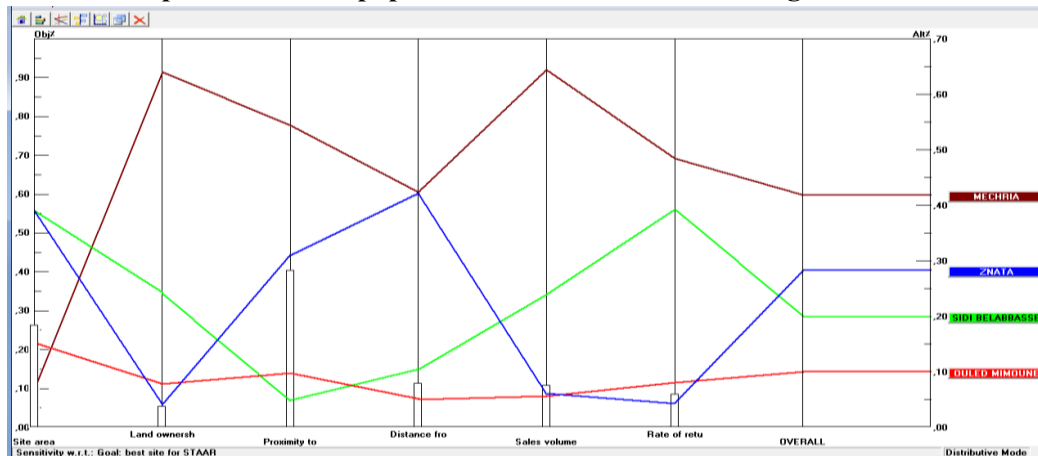


Source: Prepared by researchers based on Expert Choice outputs

According to Figure No. 8, the ranking of sites appears according to the selection model before beginning to analyze sensitivity. Using variable sensitivity, the site arrangement appears on the right while the key criteria are displayed on the left, with the location of Al-Mashriya being the first in the ranking., the second-ranked Sidi Belabas site, while Zanata is the third-ranked site, and the last-ranked ouled Mem.

When the relative importance of the "distance from population" criterion changes to 40%, variable sensitivity analysis and performance sensitivity analysis appear as follows:

Figure (10): Performance sensitivity examination of project erection sites when the relative importance of the population distance criterion changes to 40%.



Source: Prepared by researchers based on Expert Choice outputs

Figure 10 illustrates the classification of sites based on performance sensitivity, as the relative importance of the criterion "distance from population" changes from 17.5% to 40%. The figure shows that the alternatives are affected by the change in the relative importance of the criterion "distance from population," resulting in a rearrangement of the alternatives as follows:

- Mashria first-class site.
- Zanata moved to second with 28%.
- Sidi Belabas dropped to third grade by 20%.
- Mimon ouled site in the last ranking is 10%.

Based on the company's owner's decision and the results of the expert selection program, the first criterion is "Site Area" with a percentage of 41.9%, making it the most important. The fourth alternative is "Project Location," which is considered the best in terms of alignment with the proposed projects, achieving the highest importance percentage of 34%.

4-CONCLUSION

In order to provide a better alternative than the approach taken in Algeria's economic and financial institutions, and to seek a method or method on which these institutions rely to trade and arrange between projects, based on several criteria (Main and secondary), we have tried to apply the hierarchical analysis method (AHP) of the company in question, which includes accurate data, whether quantitative or how, and this is what is discussed in this

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paper, where a decision matrix has been built that includes four (4) projects (alternatives), and six main criteria, where the matrimonial comparison between the criteria, as well as the matrimonial comparisons between these alternatives to the criteria according to their relevance, is based on the EXPERT CHOICE programme for the hierarchical analysis method (AHP).

Due to the difficulty of selecting projects at the level of Algerian institutions, and for several reasons, the most prominent of which is the ineffectiveness of the information system, in addition to the traditional methods used that rely on financial analysis., this makes it necessary for Algerian institutions to adopt a quantitative approach to making a rational and sound decision between projects and choosing between available alternatives and the best sources of funding.

Conclusions and recommendations:

Our objective in this research was to try to answer the fundamental question of the extent to which multi-standard methods of decision-making in Algerian institutions, as well as how to arrange projects, thereby increasing returns, reducing risks, and discovering ways of preventing and treating them both before and when they occur.

In the light of what we have mentioned, and in order to elaborate on the objective of the study, we have used multi-standard methods in the ranking of several projects, using the hierarchical analysis method (AHP) as a decision-making aid. Through this study, both theoretical and applied, we have reached several results, including:

- To assess and mitigate these risks during the project selection process, the best available projects are chosen through comparisons based on their level of importance. On the other hand, by leveraging acquired experiences and participation or the principle of consultation, this decision is considered a multi-criteria decision that can only be addressed using multi-criteria methods.

Through this scientific research we have come to give an assessment and the degree of importance to each criterion and this is the

Matrinal comparisons based on criteria related to the objective, which will lead to the determination of the weights of these criteria. This will assist decision-makers in the future to make decisions more quickly, accurately, and at a lower cost.

- Through this study, multi-standard methods demonstrated their effectiveness by giving them healthier and more accurate results, using the hierarchical analysis method (AHP) at a consistency rate of 7% smaller than 10%, which reflects the validity and lack of conflict between comparisons.

- To respond to global transformations and developments in the economy and finance, modern methods and methods have to be introduced and used, based on scientific principles, accurate and sophisticated in the field of sports and scientific programming, primarily multi-standard methods, the most important of which is the hierarchical analysis method (AHP) and the Visual PROMETHEE program for PROMETHEE method, as well as other methods and methods.

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