

The importance of FinTech startups in supporting the financial industry in Algeria:**A comparative study using the Analytic Hierarchy Process (AHP)****Akhrouf Mohamed**

Higher School of Commerce

Koléa, Algeria

m_akhrouf@esc-alger.dz**Yahiaten Katia**

Higher School of Commerce

Koléa, Algeria

etd_kyahiaten@esc-alger.dz**Guessaoui Bouthaina**

Higher School of Commerce

Koléa, Algeria

etd_bguessaoui@esc-alger.dz

Reçu le : 11/09/2024

Accepté le : 29/12/2024

Publié le : 31/12/2024

Abstract:

Fintech startups significantly impact financial services through advanced digital innovations, challenging the dominance of traditional financial institutions, as evidenced by rising investments in these startups. Our study focuses on the crucial role of fintech startups in financial inclusion, providing a comprehensive understanding of these enterprises and their strategies, their impact on the financial industry, and their unique offerings. We concentrate on fintech startups in Algeria, using a questionnaire-based approach to gather necessary information and classifying them according to various criteria. The study evaluates these startups using the AHP method and SuperDecisions software, offering a comprehensive view of the Algerian fintech ecosystem. By examining fintech startups, we aim to highlight their importance in supporting and developing the financial industry, improving financial inclusion, and providing advanced technological solutions for transforming financial services, enhancing accessibility, efficiency, and financial inclusion of the unbanked population.

Keywords: Startup, Fintech, Innovation, Financial Inclusion, AHP**Jel Classification Codes :** C38 ; C02 ; G23**ملخص:**

الشركات الناشئة في مجال التكنولوجيا المالية تؤثر بشكل كبير على الخدمات المالية من خلال الابتكارات الرقمية المتقدمة، مما يثير تحديات أمام هيمنة المؤسسات المالية التقليدية، كما يتضح من ارتفاع الاستثمارات في هذه الشركات الناشئة. تركز دراستنا على الدور الحيوي الذي تلعبه الشركات الناشئة في التكنولوجيا المالية في تحقيق الشمول المالي، حيث توفر فهماً شاملاً لهذه الشركات واستراتيجياتها، وتأثيرها على صناعة الخدمات المالية، وعروضها الفريدة. نحن نركز على الشركات الناشئة في مجال التكنولوجيا المالية في الجزائر، باستخدام نهج قائم على الاستبيانات لجمع المعلومات اللازمة وتصنيفها وفقاً لمعايير مختلفة. تقوم الدراسة بتقييم هذه الشركات الناشئة باستخدام طريقة AHP وبرنامج SuperDecisions، مما يوفر رؤية شاملة لنظام التكنولوجيا المالية الجزائري. من خلال دراسة الشركات الناشئة في هذا المجال، نهدف إلى تسليط الضوء على أهميتها في دعم وتطوير صناعة الخدمات المالية، وتحسين الشمول المالي، وتقديم حلول تكنولوجية متقدمة لتحويل الخدمات المالية، وتعزيز الوصول والكفاءة والشمول المالي للفئات غير المتعاملة مع البنوك.

الكلمات المفتاح: شركة ناشئة، التكنولوجيا المالية، الابتكار الشمول المالي AHP

تصنيف JEL : C38 ; C02 ; G23

I. Introduction:

The financial industry has undergone a profound transformation due to the rise of Financial Technology (FinTech) startups, which have introduced innovative digital solutions tailored to evolving consumer demands. These startups challenge the traditional dominance of financial institutions by providing accessible, efficient, and inclusive services, particularly in regions with underdeveloped banking infrastructure. Despite their significant contributions globally, there remains a lack of comprehensive understanding of their role in specific contexts, such as Algeria. Algeria's financial sector is experiencing gradual disruption driven by FinTech startups, which address the unique needs of its market. These startups face regulatory challenges, limited funding opportunities, and an underdeveloped digital infrastructure, yet their potential to enhance financial inclusion and modernize financial services is considerable. This creates a pressing need to evaluate their contributions systematically. This study explores the following research problem: How do FinTech startups contribute to the development of Algeria's financial industry and enhance financial inclusion? To address this, the study investigates Algerian FinTech startups using the Analytic Hierarchy Process (AHP) and the SuperDecisions software. The following hypotheses guide the research:

1. FinTech startups significantly contribute to improving financial inclusion in Algeria.
2. The primary challenges facing FinTech startups in Algeria include regulatory constraints and limited access to funding.
3. Evaluating FinTech startups using the AHP method can provide a structured and effective analysis of their performance and potential.

This paper aims to highlight the importance of FinTech startups in supporting Algeria's financial industry, offering insights into strategies that can foster their growth and ensure their sustainability.

II. Literature Review:

The rapid advancement of technology has significantly altered the financial services landscape, with FinTech startups playing a key role in this transformation. These startups use digital innovations to offer services that are more accessible, efficient, and user-friendly than traditional financial institutions. FinTech plays a crucial role in promoting financial inclusion, particularly in regions with underdeveloped banking infrastructure. Saaty (1986) introduced the Analytical Hierarchy Process (AHP), a structured technique for analyzing complex decisions. This methodology was later expanded by Saaty and Vargas (2012), who demonstrated its versatility in various analytical scenarios. Labeeb and Ishizaka (2011), along with Ishizaka and Nemery (2013), focused on the development of multi-criteria decision-making (MCDM) techniques, emphasizing the importance of interactive and flexible approaches to evaluation. Arner, Barberis, and Buckley (2015) highlighted that fintech emerged in response to the demand for more transparent and inclusive financial services following the financial crisis, democratizing the financial sector globally. Zalan and Toufaily (2017) explored the fintech landscape in emerging markets, pointing out that the sector holds significant growth potential, even if it is not as disruptive as in advanced economies. Fenwick, McCahery, and Vermeulen (2017) discussed the role of regulation in shaping fintech companies' trajectories. They argued that regulations are necessary to ensure consumer protection and sector stability, but overly strict measures could stifle innovation and hinder the growth of startups. Demircü-Kunt et al. (2018) emphasized the role of mobile money services, which have been a major driver of financial inclusion in emerging markets. In the same vein, Lee and Shin (2018) delved deeper into the fintech business environment, examining business models and strategic challenges faced by startups. They highlighted fintech's benefits, such as cost reduction and increased customer access, while also addressing major challenges, including unclear regulations and cybersecurity risks. In a more recent analysis, Durand, Benhamou, and Lavastre (2020) assessed 50 fintech startups using AHP to evaluate criteria such as technological innovation, business models, financial stability, and management teams. Their findings

confirmed the ability of AHP to rank startups with relative accuracy. Frost (2020) advocated for flexible regulatory frameworks that encourage innovation while ensuring compliance with fundamental financial standards. This is particularly critical in emerging markets where regulatory frameworks are still evolving. In an even more recent study, Lee, Kobayashi, and Bendetti (2021) employed AHP to classify startups based on growth potential and industry impact. Their research focused on criteria such as technological maturity, target market, growth strategy, and reputation, reinforcing the value of AHP as an analytical tool for decision-makers.

In this study, AHP is applied to evaluate Algerian FinTech startups, taking into account multiple criteria that reflect their contributions to the financial industry. SuperDecision software was used to facilitate the application of AHP, providing a user-friendly platform for conducting pairwise comparisons and synthesizing results.

III. Method and Materials:

For the study on FinTech startups, we initially used descriptive analysis to clarify fundamental concepts and dimensions based on existing research. Then, we adopted an analytical approach using the Analytic Hierarchy Process (AHP) method and the SuperDecision software to rank FinTech startups in Algeria. This method allows us to prioritize startups based on various relevant criteria, providing a rigorous structure for multi-criteria decision-making and facilitating an objective comparison of the performance and potential of the startups we studied. The AHP method has caught the attention of many researchers, primarily because of its strong mathematical properties and the relatively easy-to-obtain input data (Triantaphyllou & Mann, 1995). Its simplicity lies in the pairwise comparison of alternatives based on specific criteria (Vargas, 2010). Furthermore, the method has been popularized and made user-friendly through the development of several software programs. SuperDecision (Saaty & Saaty, 2022), ExpertChoice (Forman & Saaty, 2021), and others (Mu & Pereyra-Rojas, 2018), are among the most well-known.

AHP Structures problem into hierarchy with goal, criteria, sub-criteria and alternatives. It uses pairwise comparisons to determine weights and scores. The steps of this method are as follow:

1. Define hierarchy
2. Make pairwise comparisons of elements within each level
3. Build pairwise comparison matrices
4. Derive priorities and weights
5. Check consistency
6. Synthesize results to determine priorities of alternatives

IV. Data collection:

The data of this study comes from the analysis of a questionnaire distributed to twelve (12) Algerian fintech startups. Only eight (8) startups responded to the questionnaire: Sarl Slickpay Algeria; Finout-source Sarl; Smart Solution And Innovation Sarl; Finnetude; Guiddini; Deltawire; Blink Solution; Ekiclik.

The list of criteria was established according to the questionnaire made and distributed to the fintech startup at the beginning of the study. Six (6) main criteria were identified: label, development phase, source of funding, type of customers, distribution channels, customer relations, each criterion has choices and values presented in the table 1.

Table 1: Criteria choices and values

Criteria	The choices or values
Label	✓ Yes ✓ No
Development phase	✓ Ideation stage ✓ Launch stage ✓ Growth stage ✓ Maturation stage ✓ Exit stage
Source of funding	✓ Venture Capital (VC) Investors ✓ Crowdfunding ✓ Accelerators and Incubators ✓ Traditional bank loans ✓ Government funding or specific grants ✓ Bond issues or fundraising on the financial market.
Customer Type	✓ B2B ✓ B2C ✓ B2B and B2C
Customer Relationship	✓ Use multi-format channels such as email, apps, and social media. ✓ Regular feedback collection and adjustments based on customer feedback. ✓ Personalized communication program based on customer preferences. ✓ Participation in interactive events or webinars to engage customers. ✓ Using technologies such as artificial intelligence to personalize the customer experience.
Distribution channels	✓ Online via our own web platform or app. ✓ Partnerships with other online platforms or services. ✓ Partnerships with traditional financial institutions. ✓ Integration with other services ✓ Using online advertising campaigns to attract attention.

Source: Table drawn up by the authors based on data from the questionnaire

The startup data relating to the six criteria are defined in the table 2.

Table 2: The startup data relating to the six criteria

	SARL SlickPay Algeria	FINOUT-SOURCE	SARL SMART SOLUTION AND INNOVATION	SARL FINNETUDE	Guiddini	Deltawire	BLINK SOLUTION	EkiClick
Label	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Development phase	Growth	growth	Growth	launch	maturation	launch	Maturation	launch
Source of funding	VC	Self	Crowdfunding	VC	Self	Bond issues or fundraising on the financial market. And Personal Investment	Self	Crowdfunding
Type of costumers	B2B AND B2C	B2B	B2B	B2B AND B2C	B2B	B2B	B2B	B2B AND B2C
Distribution channels	Online via our own web platform or app, Partnerships with other online platforms or services, Use of online advertising campaigns to attract attention	Partnerships with traditional financial institutions	Online via our own web platform or app	Online via our own web platform or app, Partnerships with other online platforms or services, Partnerships with traditional financial institutions, Using online advertising campaigns to attract attention	Online via our own web platform or app, Using online advertising campaigns to attract attention	Online via our own web platform or app, Partnerships with other online platforms or services, Partnerships with traditional financial institutions, Using online advertising campaigns to attract attention	Partnerships with financial institutions	Online via our own web platform or app, Partnerships with other online platforms or services, Partnerships with traditional financial institutions
Customer Relations	Use of multi-format channels such as emails, apps, and social media, Regular feedback collection and adjustments based on customer feedback, Personalized communication program based on customer preferences, Participation in interactive events or webinars to engage customers, Use of technologies such as artificial intelligence to personalize the customer experience	Regular feedback collection and adjustments based on customer feedback, Participation in interactive events or webinars to engage customers	Use multi-format channels such as email, apps, and networks	Using multi-format channels such as email, apps, and social media, Attending interactive events or webinars to engage customers, Using technologies such as artificial intelligence to personalize the customer experience	Use multi-format channels such as email, apps and social media, Personalized communication program based on customer preferences, Participation in interactive events or webinars to engage customers	Use multi-format channels such as emails, apps, and social media, Regularly collect feedback and make adjustments based on customer feedback, Participate in interactive events or webinars to engage customers	Regular feedback collection and adjustments based on customer feedback, Use of technologies such as artificial intelligence to personalize the customer experience.	Regular feedback collection and adjustments based on customer feedback, Use of technologies such as artificial intelligence to personalize the customer experience.

Source: Table drawn up by the authors based on data from the questionnaire

V. Results and discussion

The model for ranking fintech startups in Algeria is comprised of three main levels: the objective, criteria, and alternatives. The primary goal is to rank the eight fintech startups based on various criteria. These criteria are derived from a questionnaire distributed to fintech startups during the initial stages of the study.

Application of AHP for ranking fintech startups:

The model for ranking fintech startups is structured into three main levels as follows:

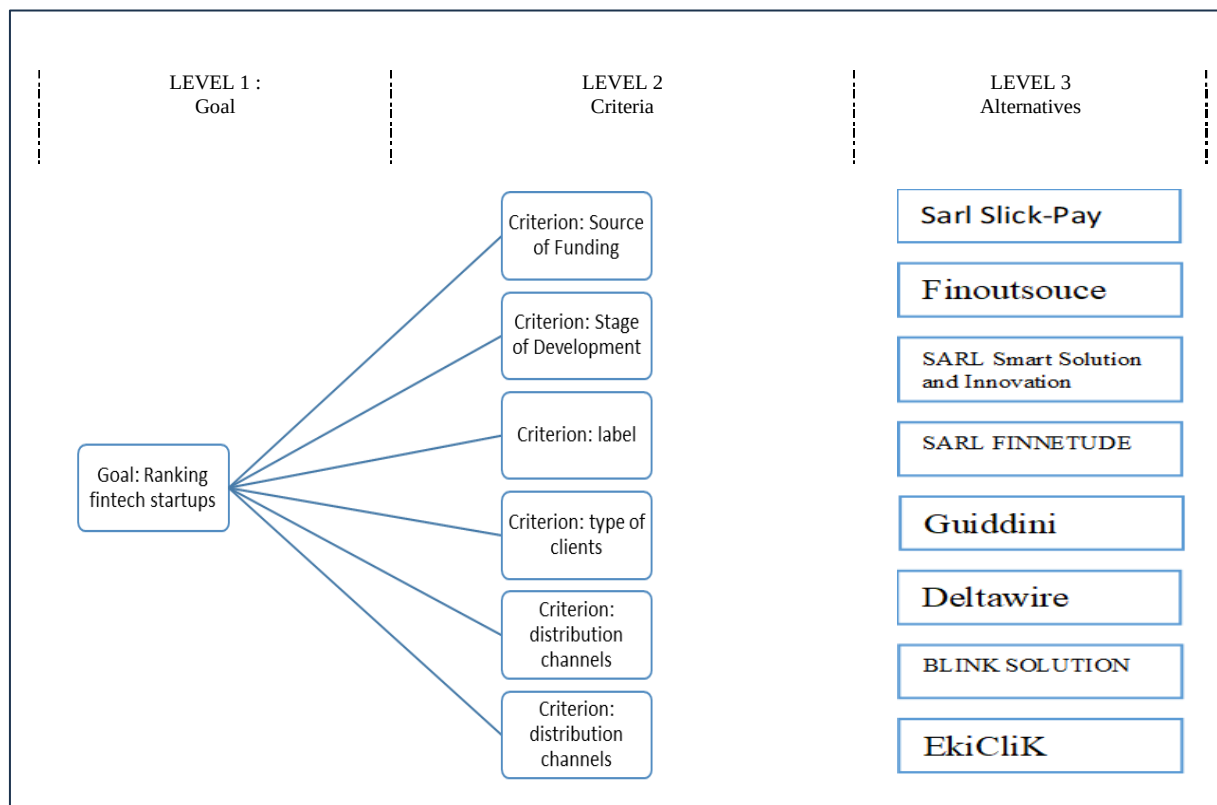
Goal (objective)	Ranking the Fintech Startups
Criteria	Label, stage of development, funding source, costumer type, distribution channels, and customer relations
Alternatives	The Eight fintech startups in Algeria : Sarl Slickpay Algeria; Finout-source Sarl; Smart Solution And Innovation Sarl; Finnetude; Guiddini; Deltawire; Blink Solution; Ekiclik

Source: Table drawn up by the authors

Establishing the hierarchical structure:

The criteria are hierarchically schematized in Figure 1, illustrating the hierarchical structure for the classification of fintech startups.

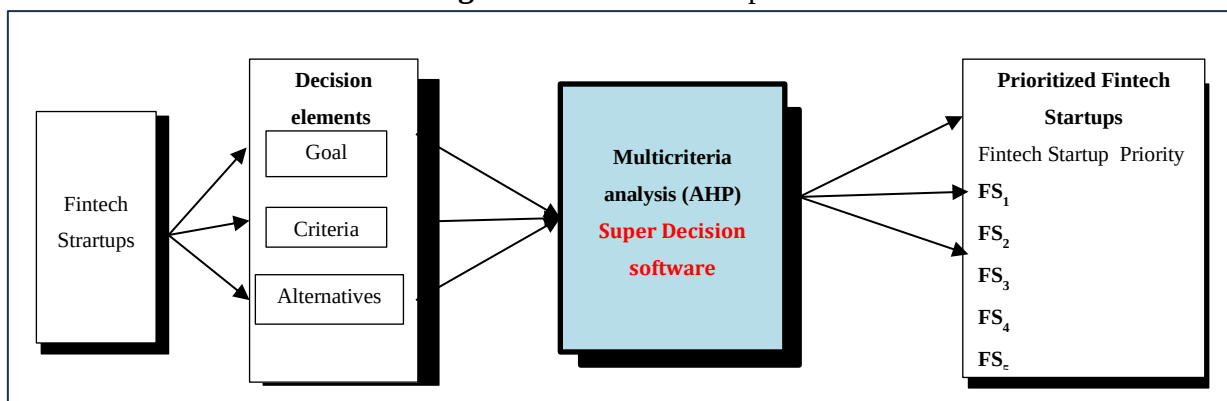
Figure 1: Hierarchical structure for the classification of fintech startups



Source: Developed by the authors based on the survey

Model operation:

The model was implemented on the Super Decisions software. Criteria weights and alternative's weights are obtained automatically from our comparisons and judgements

Figure 2 : AHP model operation

Source: Developed by the authors

Establishing Priorities:

Each criterion at the same level of hierarchical decomposition does not have equal importance in contributing to the resolution of the fintech startup classification problem.

Establishing the Priorities of Criteria:

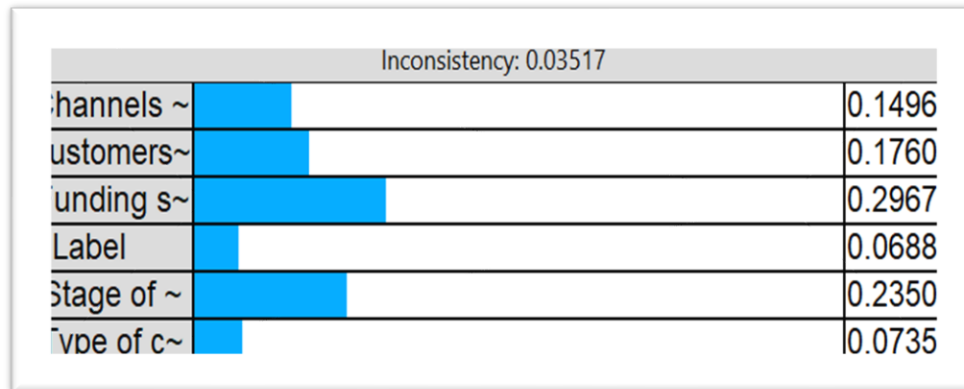
The "SuperDecision" software is an interactive decision support system based on the Analytic Hierarchy Process (AHP). It automatically calculates the relative importance of each element to achieve an overall objective. In Algeria, fintech startups are classified based on 6 evaluation criteria: label, stage of development, source of funding, type of clients, distribution channels, and customer relations. The resulting priorities from quantifications and the weighting of these criteria are provided in Table No. 01 and Figure No. 02 based on group consensus.

Table 3 : RESULTS OF THE AHP APPLICATION: RELATIVE WEIGHTING OF MAIN CRITERIA PRIORITIES

Rankings	Criteria	Relative Weight
1	Source Of Funding	0.29674
2	Stage Of Development	0.23509
3	Customer Relations	0.17606
4	Channels Of Distribution	0.14967
5	Type Of Clients	0.07358
6	Label	0.06886
	Inconsistency Ratio =0.03517	

Source: Developed by the authors, the data provided from the SuperDecision software

Figure 3: Graph Resulting From The Application Of The Superdecision Software - Criteria Weighting



Source: Author's design - screenshot from the SuperDecision software

The AHP analysis results underscore the significance of specific criteria in classifying fintech startups. Notably, the source of funding holds the highest importance at 29.67%, emphasizing the critical role of financial resources in their success. Following closely is the stage of development at 23.51%, indicating its pivotal role in evaluating the potential of these startups. Additionally, customer relations, prioritized at 17.61%, and distribution channels, essential at 14.97%, further contribute to the comprehensive assessment. Conversely, the type of clients and the label are deemed less critical, at 7.36% and 6.89% respectively, yet they remain relevant factors. These findings provide a clear framework for evaluating fintech startups, emphasizing their financial and developmental aspects.

Establishing the Priorities of Alternatives:

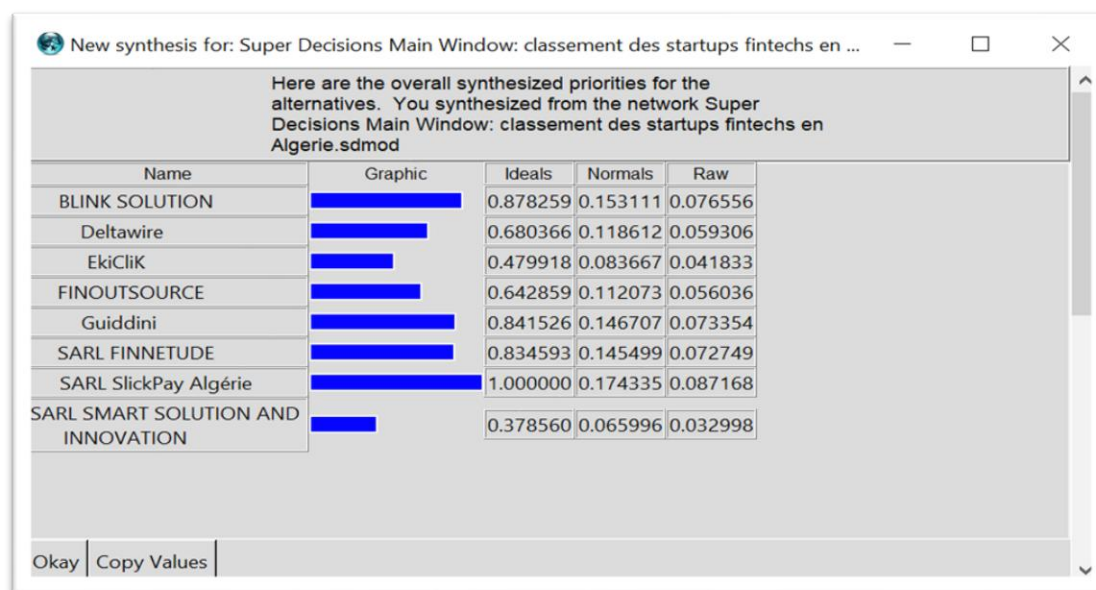
After establishing the criteria priorities, we can evaluate each fintech startup based on the chosen criteria. Similar to how we prioritized the criteria, we will compare the candidate fintech startups in pairs, considering all the established criteria. In this instance, we have identified eight different fintech startups that require prioritization.

Overall Classification Synthesis of Fintech Startups:

Table 4: Overall Classification Synthesis of Fintech Startups

Rankings	Fintech stratups	Relative Weight
1	SARL SlickPay Algérie	17.43%
2	BLINK SOLUTION	15.31%
3	Guiddini	14.67%
4	SARL FINNETUDE	14.55%
5	Deltawire	11.86%
6	FINOUTSOURCE	11.21%
7	EkiCliK	8.37%
8	SARL SMART SOLUTION AND INNOVATION	6.59%
Inconsistency Ratio = 0,09		

Source: Author's design based on the data provided by the SuperDecision software

Figure 4: Overall Classification Synthesis of Fintech Startups

Source: Screenshot from the SuperDecision software

According to the AHP analysis, SARL SlickPay Algeria ranks first with a weighting of 17.43%, making it the best alternative based on the defined criteria. This suggests that this startup excels in crucial aspects such as funding source and development phase, while also maintaining good customer relations and effective distribution channels. BLINK SOLUTION follows closely with 15.31%, making it a strong option. Guiddini takes the third position at 14.67%, showing balanced yet slightly less competitive performance in some criteria. SARL FINNETUDE is very close behind at 14.55%, indicating that it is also performing well but slightly trailing the leaders. Deltawire is at 11.86% and FINOUTSOURCE at 11.21%, placing them in the middle of the ranking, suggesting an average performance. EkiCliK at 8.37% and SARL Smart Solution and Innovation at 6.59% are at the bottom of the ranking, indicating weaker performances compared to the evaluated criteria. The inconsistency ratio of 0.09 suggests that the pairwise judgments are coherent.

VI. Sensitivity Analysis:

The final rankings of the alternatives will be greatly influenced by the weights assigned to the respective criteria. It is helpful to perform a "what if" analysis to see how the final results would have changed if the criteria weights had been different (Mu & Pereyra-Rojas, 2018). This process is known as sensitivity analysis and represents the final step of our AHP methodology. It allows us to assess the strength of our initial decision and identify the criteria that influenced the primary results. Therefore, the last step of alternative evaluation involves conducting a sensitivity analysis. This study aims to evaluate the sensitivity of the results based on the importance assigned to each criterion. It is a crucial phase of the decision-making process, and no final decision should be made without appropriate sensitivity analysis. The sensitivity analysis of the ranking of alternatives (fintech startup rankings) was performed using SuperDecision software version 2.1. This analysis is valuable for understanding the impact of changing the weights of the main criteria on the startup rankings.

Sensitivity analysis of the relative importance of different criteria:

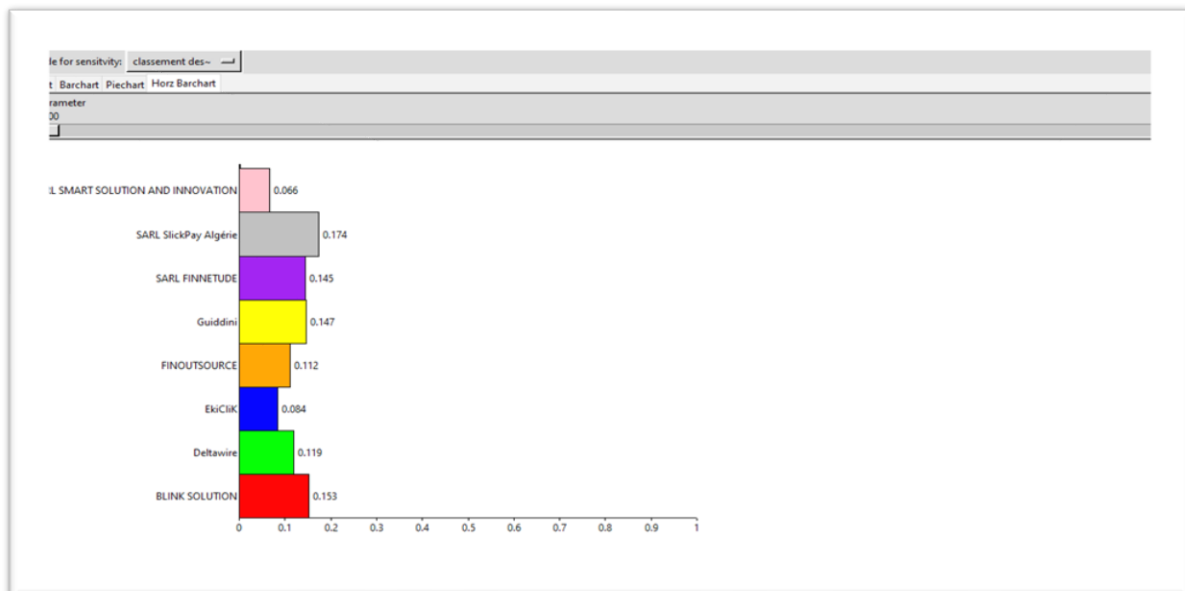
For sensitivity analysis, we need to adjust the weights of the criteria and see how they impact the overall priorities of the alternatives. Referring to the original model in Table 3 and Figure 4, it's evident that the "source of funding" criterion holds significant importance 0.29674. With a high ranking of 0.2205 for this criterion, the startup BLINK SOLUTION undeniably has a positive influence on the final result.

Table 5 : Original Scenario - Model Synthesis

Criteria	Weights	Fintech Startups	Weights
Source Of Funding	0.29674	SARL Slickpay Algérie	0.1743
Stage Of Developpement	0.23509	BLINK SOLUTION	0.1531
Customer Relations	0.17606	Guiddini	0.1467
Channels Of Distribution	0.14967	SARL FINNETUDE	0.1455
Type Of Clients	0.07358	Deltawire	0.1186
Label	0.06886	FINOUTSOURCE	0.1121
		Ekiclik	0.0837
		SARL SMART SOLUTION AND INNOVATION	0.0659

Source: Author's design based on the data provided by the SuperDecision software

Figure 5: The overall priorities of the alternatives – original scenario



Source: Author's design - screenshot from the SuperDecision software

In the sensitivity analysis, we will explore the best alternatives by changing the importance of various criteria. This will involve considering scenarios where all criteria have the same importance, giving more importance to the distribution channels criterion, or treating it as equally important as the funding source criterion.

To achieve this, we will vary the relative weights of certain criteria as follows:

- We will make significant variations around the weights of the criteria for customer relations, stage of development, and funding source, as these are more relevant to our overall objective.
- Smaller variations will be used around the weight of the distribution channels criterion.

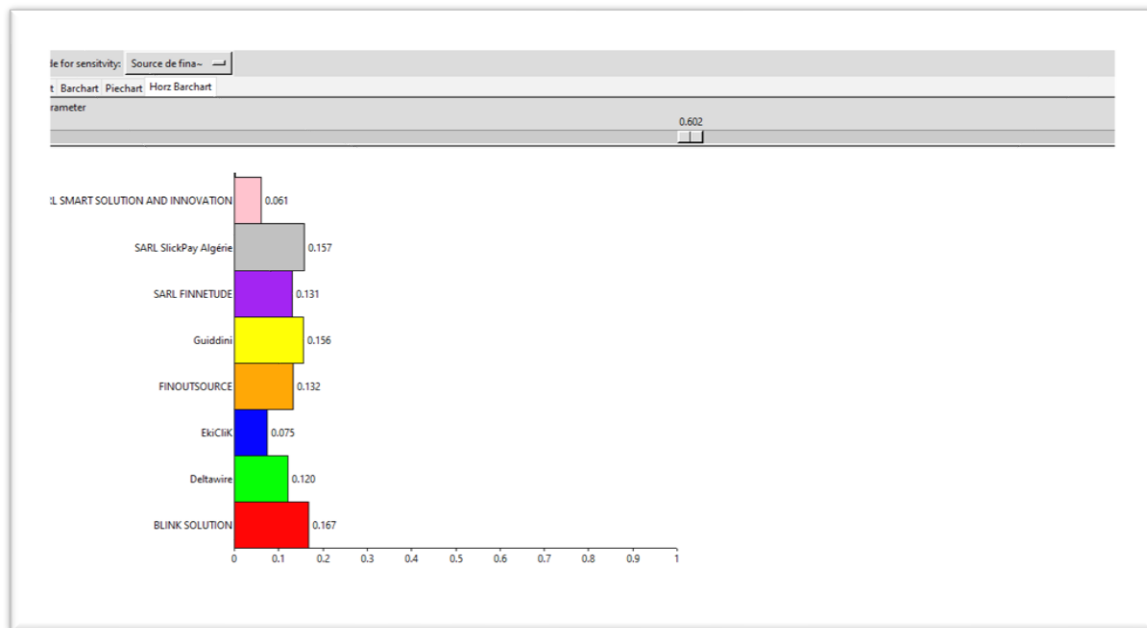
We will conduct scenarios by changing the weight of a given criterion one at a time, and have selected four different scenarios:

- Scenario 1: Sensitivity Analysis regarding the Funding Source Criterion
- Scenario 2: Sensitivity Analysis regarding the Stage of Development Criterion
- Scenario 3: Sensitivity Analysis regarding the Customer Relations Criterion
- Scenario 4: Sensitivity Analysis regarding the Distribution Channels Criterion

Scenario 1: Sensitivity analysis regarding the funding source criterion

By gradually increasing the weight of the "Funding Source" criterion until it reaches 60% of the relative importance to the objective, we observed a change in the ranking of startups compared to the initial scenario. BLINK SOLUTION emerged as the top-ranked fintech startup, with a priority score of 0.167. SARL Slick-Pay Algeria closely followed with a score of 0.157. Guiddini secured the third position with a score of 0.155. FINOUTSOURCE and SARL FINNETUDE shared the fourth position with identical scores of 0.132. Deltawire followed with a score of 0.120. EkiClik ranked seventh with a score of 0.076, while SARL SMART SOLUTION & INNOVATION concluded the ranking with the lowest score of 0.06, see Figure 5.

Figure 6: Sensitivity Analysis Regarding the Funding Source Criterion -Scenario 1

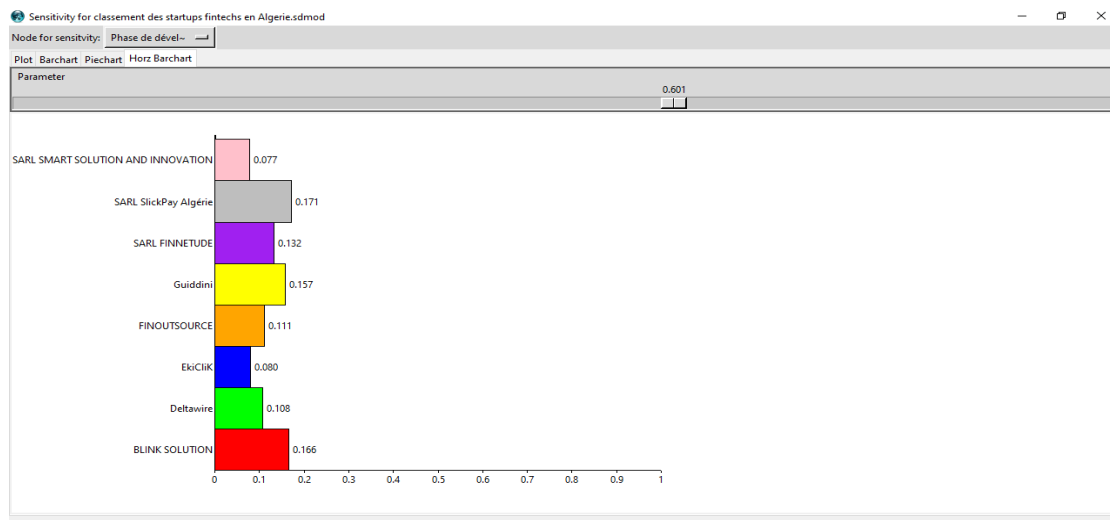


Source: Author's design - screenshot from the SuperDecision software

Scenario 2: Sensitivity analysis regarding the stage of development criterion

Increasing the weight of the "Stage of development" criterion to 60% of the relative importance to the objective resulted in changes in the ranking of startups compared to the initial scenario. The sensitivity analysis showed variations in priorities among fintech startups based on changes to the weight of the stage of development criterion. In this scenario, SARL Slick-Pay Algeria had the highest priority score of 0.171, making it the top alternative. BLINK SOLUTION closely followed with a priority score of 0.166, confirming its strength in this sensitivity analysis. Guiddini, FINOUTSOURCE, and SARL FINNETUDE also showed significant priority scores, indicating their competitiveness. On the other hand, EkiClik, Deltawire, and SARL SMART SOLUTION & INNOVATION obtained lower priority scores, suggesting they are less favored in this context. These results emphasize the significance of the stage of development in evaluating fintech startups and highlight the differences in priority that can arise from variations in its relative weight, see Figure 6.

Figure 7: Sensitivity analysis regarding the stage of development criterion-scenario 2

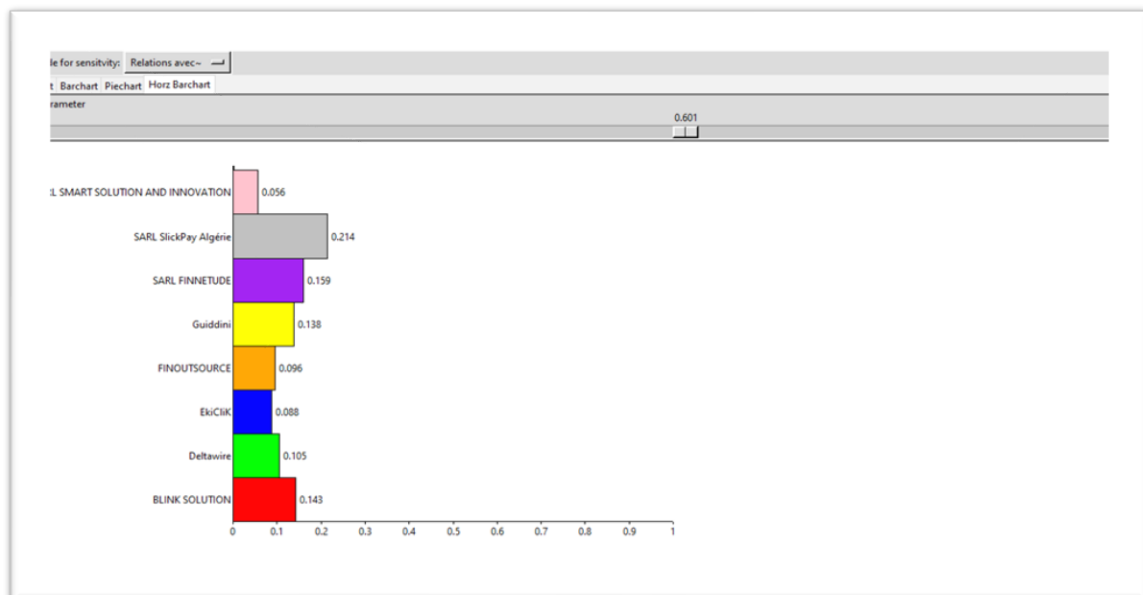


Source: Author's design - screenshot from the SuperDecision software

Scenario 3: Sensitivity analysis regarding the customer relations criterion

By gradually increasing the weight of the "customer relations" criterion until it reaches 60% of the relative importance to the objective, we observed a change in the ranking of startups compared to the initial scenario. SARL Slick-Pay Algeria emerged as the top-ranked startup with a weight of 0.214, showcasing its strength in customer relations. BLINK SOLUTION followed closely behind. Other startups, such as SARL FINNETUDE, Guiddini, and Deltawire, also maintained relatively high rankings, suggesting their overall resilience to changes in the weight of the "customer relations" criterion. Conversely, SARL SMART SOLUTION & INNOVATION received a lower weight, reflecting its weaker performance in customer relations compared to other startups, see Figure 7.

Figure 8: Sensitivity analysis regarding the customer relations criterion-scenario

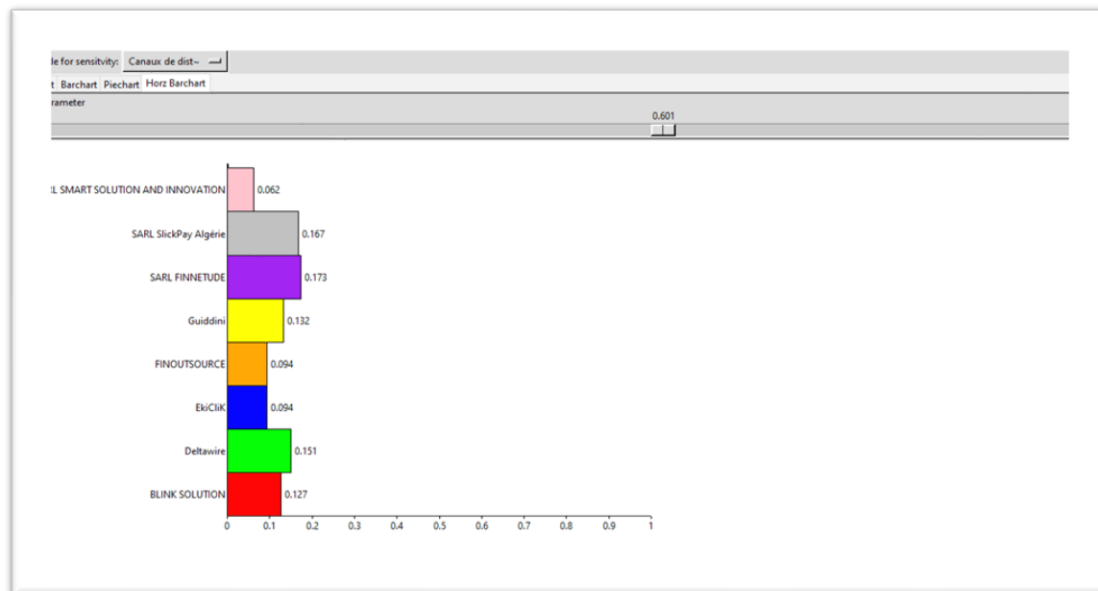


Source: Author's design - screenshot from the SuperDecision software

Scenario 4: Sensitivity analysis regarding the distribution channels criterion

When we gradually increase the weight of the "distribution channels" criterion until it reaches 60% of the relative importance to the objective, we notice a change in the ranking of startups compared to the initial scenario. SARL FINNETUDE is now ranked in the first position with a priority of 17.2%, followed by SARL Slick-Pay Algeria with a priority of 16.7%, see Figure 8.

Figure 9 : Sensitivity Analysis Regarding the Distribution Channels Criterion -Scenario 4



Source: Author's design - screenshot from the SuperDecision software

VII. Conclusion:

This study aimed to evaluate and rank FinTech startups in Algeria using the Analytic Hierarchy Process (AHP), a multicriteria decision-making method. By applying AHP, the study identified critical success factors for these startups, including the stage of development, funding sources, customer relations, distribution channels, target clients, and branding. The findings revealed that **SARL SlickPay Algérie** ranked highest among the eight startups analyzed, driven by its strong funding sources and well-established development stage. **BLINK SOLUTION** and **Guiddini** also performed well, demonstrating a balanced performance across key criteria. **SARL FINNETUDE** followed closely behind. In contrast, **EkiClik** and **SARL SMART SOLUTION AND INNOVATION** ranked lower, indicating the need for improvement in areas such as funding and development. The sensitivity analysis reinforced the robustness of these rankings, showing that shifts in the weighting of criteria like customer relations and distribution channels could alter the rankings. This highlights the importance of considering multiple factors when evaluating startups. Ultimately, the study provides valuable insights for investors, policymakers, and other stakeholders in Algeria's FinTech ecosystem. It emphasizes the factors driving success and offers a framework for future research. Expanding the sample size, incorporating additional criteria, or using alternative decision-making methods could further validate the results. By continuing to monitor and adapt to the dynamic FinTech landscape, stakeholders can enhance their support for innovation and financial inclusion in Algeria.

References:

1. Arner, D., Barberis, J., & Buckley, R. (2015). The evolution of Fintech: A new post-crisis paradigm? *Georgetown Journal of International Law*, 47(4), pp. 1271-1319.
2. Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank Publications.
3. Fenwick, M., McCahery, J., & Vermeulen, E. (2017). *Fintech and the financing of entrepreneurs: From crowdfunding to marketplace lending*. Retrieved from http://ssrn.com/abstract_id=2967891: http://ssrn.com/abstract_id=2967891
4. Frost, J. (2020). *The economic forces driving FinTech adoption across countries*. Basel: BIS Working Papers.
5. Gomber, P., Koch, J.-A., & Siering, M. (2017). Digital finance and FinTech: Current research and future research directions. *Journal of Business Economics*, 87(5), pp. 537-580.
6. Ishizaka, A., & Nemery, P. (2013). Multi-criteria decision analysis: methods and software. *John Wiley & Sons*.
7. Labib, A., & Ishizaka, A. (2011). Review of the main developments in the analytic hierarchy process. *Expert Systems with Applications*.
8. Lavastre, O., Benhamou, S., & Durand, J. (2020). Evaluation of FinTech Startups Using AHP: A Multicriteria Decision-Making Approach. *International Journal of Information Management*.
9. Lee, I., & Shin, Y. (2018). (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business horizons*, 61(1), pp. 35-46.
10. Li, M., Kobayashi, T., & Benedetti, A. (2021). Classification of FinTech Startups Using AHP: Identifying Tomorrow's Leaders. *Technological Forecasting and Social Change*.
11. Mu, E., & Pereyra-Rojas, M. (2018). *Practical Decision Making using Super Decisions v3, An Introduction to The Analytic Hierarchy Process*. Springer.
12. Saaty, T. (1986, Juillet). Axiomatic fondation of the Analytic Hierarchy process. *Management science*, pp. 845-855.
13. Saaty, T. (1999). *Decision Making for Leaders: The Analytic Hierarchy Process for Decisions in a Complex World*. Pittsburgh: PA: RWS Publications.
14. Saaty, T. (2005). *Models, Methods, Concepts & Applications of the Analytic Hierarchy Process*. New York: NY: Springer.
15. Saaty, T., & Saaty, R. (2022). SuperDecisions software.
16. Saaty, T., & Vargas, L. (2012). The seven pillars of the analytic hierarchy process. Models, methods, concepts & applications of the analytic hierarchy process. *Springer*, pp. 23-40.
17. Triantaphyllou, E., & Mann, S. (1995). Using the analytic hierarchy process for decision making in engineering applications: some challenges. *International Journal of Industrial Engineering: Applications and Practice*.
18. Vargas, L. (2010). An overview of the analytic hierarchy process and its applications. *European Journal of Operational Research* 48(1), 2-8.
19. Zalan, T., & Toufaily, E. (2017). The promise of Fintech in emerging markets: Not as disruptive. *Contemporary Economics*, 11(4), pp. 415-431.