



Determining social media marketing tools using AHP method in evaluating digital marketing initiatives

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Abstract

The primary objective of this research is to utilize the Analytic Hierarchy Process (AHP) to strategically evaluate and select optimal social media marketing tools tailored for businesses. Given the shift in consumer behavior driven by digital platforms, small enterprises must navigate this complex landscape effectively to enhance brand visibility and engagement. This study aims not only to identify critical factors influencing social media tool selection—such as Effectiveness, Cost, User-Friendliness, Audience Relevance—but also to prioritize these elements based on empirical data and expert insights. By establishing a robust decision-making framework, the research seeks to provide actionable guidelines for business owners, enabling them to maximize their return on investment in social media marketing. Ultimately, the findings are expected to contribute to the theoretical discourse on digital marketing strategies while offering practical implications for enhancing competitive advantage in an increasingly digital economy. This essay seeks to explore the application of the AHP in strategic evaluations, providing insights into its advantages and potential for optimizing social media marketing strategies.

Keywords: Digital marketing, social media marketing, AHP Method

Introduction

In an increasingly digital and interconnected marketplace, the strategic evaluation and selection of social media marketing tools have emerged as critical components for organizations aiming to enhance their online presence and engagement (Keegan & Rowley, 2017) ^[19, 20]. Recognizing the diverse array of platforms available, marketers face the daunting challenge of aligning these tools with their organizational goals, target audience, and resource constraints (Rosário & Dias, 2023) ^[38]. The Analytical Hierarchy Process (AHP), a robust multi-criteria decision-making framework, offers a systematic approach to navigate this complexity (Dos Santos, Neves, Sant'Anna, De Oliveira & Carvalho, 2019) ^[17]. By decomposing the decision-making process into a hierarchy of objectives, criteria, and alternatives, AHP facilitates quantitative assessments of qualitative choices, enabling marketers to evaluate tools based on factors such as cost, usability, and effectiveness (Kurniawan & Hermawan, 2023) ^[22].

The integration of social media tools within marketing strategies has redefined the paradigms through which organizations engage with consumers, fostering both interactive communication and brand loyalty (Paquette, 2013) ^[36]. Specifically, platforms such as Facebook, X (Twitter), and Instagram serve as critical touchpoints that allow brands to cultivate relationships with their audiences, delivering personalized content that enhances customer experience (Santos, Cheung, Coelho & Rita, 2022) ^[40]. A growing body of literature emphasizes the necessity of employing a comprehensive approach to strategic evaluation when selecting appropriate social media marketing tools, as this ensures alignment with organizational goals and market dynamics (Keegan & Rowley, 2017) ^[19, 20]. Furthermore, the escalating complexity of multi-tier supply chains underscores the importance of social sustainability in these marketing efforts, compelling brands to navigate ethical considerations while optimizing their digital outreach (Al-Okaily, Younis & Al-Okaily, 2024) ^[3]. Thus, an Analytical

Hierarchy Process (AHP) framework can facilitate systematic decision-making, enabling marketers to prioritize tools that effectively harness the potential of social media in achieving desired outcomes (Sreenivasan, Suresh & Nedungadi, 2023) ^[48].

The selection of appropriate social media tools presents a multifaceted set of challenges that can significantly impact marketing efficacy (Mahmoud & El-Masry, 2023) ^[25]. As the landscape of social media influencers expands, for instance, marketers grapple with identifying influencers whose credibility aligns with their brand values, complicating the strategic selection process (Dauhan & Langi, 2024) ^[16]. Sensitivity analysis in the Analytic Hierarchy Process (AHP) plays a pivotal role in enhancing the robustness and credibility of decision-making frameworks, particularly in the strategic evaluation and selection of social media marketing tools (Wiwatkajornsak & Phuaksaman, 2024) ^[50]. By systematically examining how variations in input parameters—such as the relative importance of criteria or the performance ratings of alternatives—affect the overall ranking of social media tools, researchers and practitioners can identify which factors exert the most influence on the final outcomes (Stavarakantonakis, Gagiou, Kasper, Toma & Thalhammer, 2012) ^[49]. Such analyses not only unveil the potential uncertainties or biases embedded within the decision matrix but also bolster the transparency of the AHP methodology by revealing the sensitivity of results to changes in input values (Chen, Yu & Khan, 2013) ^[13]. This aspect is particularly crucial in dynamically evolving fields like digital marketing, where rapid shifts in consumer behavior and technology necessitate agile and informed decision-making frameworks (Bikse, Grinevica, Rivza & Rivza, 2022) ^[10]; (Mohsin *et al.*, 2021) ^[30].

Background of Social Media Marketing

In the evolving landscape of digital marketing, social media has emerged as a pivotal channel for engaging consumers,

driven by its ability to facilitate direct interaction and foster community-building among diverse user bases (Budikova, 2014) ^[11]. The growth of platforms such as Facebook, Instagram, and X(Twitter) has transformed traditional marketing paradigms, allowing businesses to utilize targeted communication strategies that resonate with specific audience segments (Lai & Fu, 2021) ^[23]. This shift necessitates a thorough understanding of consumer behavior on these platforms, as evidenced by studies that employ the Analytic Hierarchy Process (AHP) to systematically evaluate the determinants influencing consumer habits, including cultural and personal factors (Šostar & Ristanović, 2023) ^[47]. Organizations must adapt their marketing strategies to leverage the dynamic interactions facilitated by social media while also employing analytical tools like AHP for strategic decision-making, ensuring they select the most effective marketing tools to enhance their outreach and engagement metrics (Avci, Bozdemir & Alkan, 2023) ^[6].

1. Importance of Tool Selection

Effective tool selection not only aligns with the brands strategic objectives but also accommodates the complexities of consumer behavior, as seen in studies employing Multi-Criteria Decision Making (MCDM) approaches like the Analytical Hierarchy Process (AHP) (Athi, 2024) ^[5]. This methodology allows for a nuanced understanding of evaluation criteria—ranging from technological prowess to user acceptance—as factors influencing tool efficacy. Furthermore, user acceptance models such as the Technology Acceptance Model (TAM) highlight the significant role that consumer expectations play in tool selection, emphasizing the need for marketers to consider both functional capabilities and the psychological impact of social media tools on target audiences (Al-Amawi, Al-Sarabi, Alsaaidh, Akour & Al-Malahmeh, 2024) ^[2]. Thus, a strategic approach to tool selection fundamentally enhances the effectiveness of social media marketing initiatives.

2. Social Media Marketing Tools & Types

The increasing reliance on social media marketing tools has necessitated a structured methodology for evaluating their strategic efficacy within organizations. The Analytical Hierarchy Process (AHP) emerges as a significant approach for systematically assessing various social media platforms and tools, enabling companies to align their marketing strategies with overarching business objectives. By identifying key criteria such as reach, engagement, conversion rates, and content effectiveness, as highlighted in existing studies, the AHP facilitates informed decision-making and prioritization of resources (Melati, 2024) ^[28]. There is a demonstrable correlation between effective social media marketing and enhanced brand awareness, indicating that a judicious selection of tools can yield considerable marketing benefits (Chitra & Sasikala, 2016) ^[14]. Adopting the AHP approach thus not only streamlines the evaluation process but also amplifies the potential for achieving superior outcomes in social media marketing initiatives.

The landscape of social media marketing tools is remarkably diverse, encompassing a variety of platforms and applications that facilitate brand engagement, content dissemination, and audience analytics (Semenda, Sokolova, Korovina, Bratko & Polishchuk, 2024) ^[42]. Tools can be categorized into several types, including social media management systems, analytics platforms, and influencer

marketing tools (Sapountzi & Psannis, 2018) ^[41]. Social media management systems, such as Hootsuite and Buffer, enable marketers to schedule posts, monitor engagement, and manage multiple accounts, thus enhancing efficiency in content delivery (Santhi, Latha & Mrss, 2019) ^[39]. Analytics platforms, on the other hand, provide insights into audience behavior and campaign performance, thereby assisting in data-driven decision-making. Notably, the emergence of influencer marketing tools signifies a shift towards more personalized outreach, wherein brands leverage the credibility of social media influencers to enhance brand visibility and engagement (Shukla & Dubey, 2022) ^[44]. This multifaceted approach to selecting social media marketing tools, grounded in the Analytic Hierarchy Process (AHP), allows for a strategic evaluation of options, ultimately facilitating informed decisions aligned with organizational objectives (Mukhsinov & Ergashodjayeva, 2022) ^[32].

3. Criteria for Evaluating Social Media Tools

In the context of evaluating social media tools, the selection criteria must be multidimensional, incorporating factors such as user engagement, cost-efficiency, and platform relevance to target demographics (Chiworeka, Thango, Gumede & Magoda, 2024) ^[15]. For instance, user engagement metrics, including likes, shares, and comments, serve as indicators of a tool's effectiveness in fostering interaction and building brand loyalty (Rane, Achari & Choudhary, 2023) ^[37]. Furthermore, the financial implications of adopting specific platforms cannot be understated; tools must be assessed for their return on investment, ensuring that marketing expenditures align with projected customer acquisition costs (Marzi, Marrucci, Vianelli & Ciappei, 2023) ^[26]. Additionally, spatial relevance to the intended audience is crucial, as highlighted by AHP analyses that prioritize platforms like Instagram for their higher user influence in youth demographics (Omoera, Bulugbe & Olufayo, 2020) ^[35]. Consequently, a comprehensive evaluation framework, underpinned by these criteria, enables marketers to strategically select the most appropriate social media tools, enhancing their overall marketing strategy and effectiveness.

4. Trends in Social Media Marketing Tools

The evolution of social media marketing tools is increasingly characterized by the integration of advanced analytics and artificial intelligence (AI), which are revolutionizing how brands engage with their audiences (Sharma & Verma, 2018) ^[43]. The growing focus on brand image within digital marketing emphasizes the necessity for tools that not only facilitate basic consumer interaction but also provide in-depth insights into consumer behavior and engagement patterns (Smolkova, 2018) ^[46]. The use of these analytics tools enables marketers to assess the effectiveness of campaigns in real-time, allowing for informed adjustments that enhance marketing strategies. Illustrates the significant impact of tailored content and platform selection in driving online consumer behavior, outcomes underscored by emerging trends in social media marketing (Anjorin, Raji & Olodo, 2024) ^[4]; (Mukhtar, Mohan & Chandra, 2023) ^[33]. Thus, the strategic evaluation and selection of these sophisticated tools are paramount, as they allow businesses to navigate the complex digital landscape and maximize their marketing effectiveness.

Theoretical Framework of AHP

The Analytic Hierarchy Process (AHP) is a structured decision-making framework that facilitates rational and informed evaluations across various criteria, making it particularly valuable in the strategic selection of social media marketing tools. This methodology enhances transparency and objectivity in the selection process by employing pairwise comparisons, thus enabling stakeholders to quantify their preferences and mitigate biases intrinsic to subjective evaluations (Chen & Wang, 2010) [12]. As digital marketing landscapes evolve with the proliferation of diverse tools, AHPs systematic approach proves essential for organizations aiming to align their tool selections with overarching strategic objectives effectively (Kim & Shim, 2018) [21]. Ultimately, AHP not only streamlines decision-making but also ensures that the selected tools contribute significantly to achieving desired marketing outcomes in a competitive digital environment (Leung & Mo, 2019) [24].

The Analytical Hierarchy Process (AHP) operates within a robust theoretical framework that facilitates multi-criteria decision-making, particularly relevant for evaluating social media marketing tools (Mukhsinov & Ergashxodjayeva, 2022) [32]. By decomposing complex criteria into a hierarchical structure, AHP allows decision-makers to systematically analyze options based on both qualitative and quantitative factors (Mastrocinque, Ramírez, Honrubia-Escribano & Pham, 2022) [27]. This approach emphasizes stakeholder perspectives, as it enables the incorporation of diverse viewpoints in the assessment process, underscoring the methods adaptability in various contexts such as those observed in Industry 4.0 settings. Furthermore, AHPs iterative pairwise comparison method fosters a transparent decision-making environment, essential for justifying the selection of specific marketing tools in response to dynamic market conditions, a feature underscored by its relevance during crises like the COVID-19 pandemic. Thus, the theoretical underpinnings of AHP not only enhance decision-making rigor but also facilitate strategic alignment with organizational objectives in social media marketing evaluations (Mohsin *et al.*, 2021) [30].

1. Application of AHP in Tool Selection

The Analytical Hierarchy Process (AHP) is an instrumental framework for guiding the selection of social media marketing tools, particularly amidst the complexities of evaluating multiple criteria and options (Sipahi & Timor, 2010) [45]. By decomposing the decision-making problem into a structured hierarchy, AHP facilitates a comparative assessment of various tools based on strategic criteria such as effectiveness, cost-efficiency, and user engagement potential (Bhambri & Kautish, 2024) [8, 9]. This structured methodology allows decision-makers to quantify subjective judgments, thus enhancing the transparency and justification of their choices. Additionally, the application of AHP can integrate qualitative factors that are often overlooked in traditional selection methods, thus aligning with strategic goals more effectively (Munier & Hontoria, 2021) [34]. As noted in contemporary literature, this approach not only mitigates biases inherent in social media tool selection but also enhances managers strategic decisions, crucial for navigating the dynamic landscape of digital marketing (Benzaghta, Elwalda, Mousa, Erkan & Rahman, 2021) [7].

AHP stands as a robust tool in optimizing strategic evaluations for social media marketing (Govindan, Shaw & Majumdar, 2021) [18].

2. Steps in Implementing AHP for Tool Selection

Implementing the Analytic Hierarchy Process (AHP) for tool selection in social media marketing necessitates a systematic approach that enhances decision-making quality (Sipahi & Timor, 2010) [45]. The initial step involves defining the goal, which is to select the most suitable marketing tools based on specific criteria such as Effectiveness, Cost, User-Friendliness, Audience Relevance. Following this, stakeholders must identify and structure these criteria into a hierarchical framework, facilitating comparison across various tools (Sipahi & Timor, 2010) [45]. The next step requires the aggregation of subjective evaluations of the criteria and alternatives through pairwise comparisons, effectively encapsulating expert opinions while minimizing biases. Once the comparisons are completed, the AHP algorithm calculates the priority vectors, which rank the alternatives according to their overall importance. Finally, sensitivity analysis is performed to verify the robustness of the results, ensuring that decisions remain viable amidst potential changes in the underlying assumptions or criteria weighting (Mastrocinque *et al.*, 2022) [27].

Evaluation With AHP Method

The Analytical Hierarchy Process (AHP) can be used effectively to evaluate and select social media marketing tools by systematically breaking down the decision-making process into a hierarchy of criteria and alternatives. The first thing to do is to set a goal. The overall goal is to choose the best social media marketing tool to meet strategic business objectives such as improving brand visibility, audience engagement, analytics capabilities, or cost efficiency. Second, the key criteria against which the tools will be evaluated must be defined. These were determined in the study as follows:

Defining the Hierarchical Model:

- **Purpose:** To select the most appropriate social media marketing tool.
- **Criteria:** For example, Efficiency, Cost, User-Friendliness, Suitability to Target Audience.
- **Alternatives:** For example, Facebook, Instagram, LinkedIn, Twitter.

Creating the comparison matrix:

- The criteria are combined with binary comparisons among themselves and according to the alternatives sections.

Calculating the weights:

- The weights of the criteria and the importance levels of the alternatives are calculated according to these strengths.

Analysis of the Results:

- The general ranking of the alternatives is made according to the weights of all criteria.

Abbreviations for the table:

- **Criteria:** Effectiveness (E), Cost (C), User-Friendliness (U), Audience Relevance (A).
- **Alternatives:** Facebook (F), Instagram (I), LinkedIn (L), Twitter (T).

1. AHP Tables and Results

1.1. Comparison Matrix of Criteria

Table 1

	Effectiveness	Cost	User-Friendliness	Audience Relevance
Effectiveness	1.000	3.000	5.000	2.000
Cost	0.333	1.000	3.000	0.500
User-Friendliness	0.200	0.333	1.000	0.250
Audience Relevance	0.500	2.000	4.000	1.000

1.2. Criteria Weights

Table 2

Criteria	Weight
Effectiveness	0.470859
Cost	0.171483
User-Friendliness	0.073645
Audience Relevance	0.284013

1.3. Weights and Overall Score of Alternatives According to Criteria

Table 3

Alternatives	Effectiveness	Cost	User-Friendliness	Audience Relevance	Overall Score
Facebook	0.292602	0.121320	0.439831	0.199180	0.247540
Instagram	0.520427	0.068453	0.192538	0.074899	0.292238
LinkedIn	0.114819	0.313493	0.065053	0.582566	0.278069
Twitter	0.072152	0.496734	0.302577	0.143355	0.182153

En yüksek genel skoru alan alternatif in Instagram (0.292) olduğu ve sırasıyla LinkedIn (0.278) ve Facebook (0.247) izliyor. Twitter (0.182) ise son sırada yer alıyor.

Analysis of Results

The analysis of results from the AHP (Analytic Hierarchy Process) approach reveals critical insights into the strategic selection of social media marketing tools. By systematically prioritizing criteria such as Effectiveness, Cost, User-Friendliness, Audience Relevance, the AHP methodology facilitates a structured decision-making process that resonates with contemporary marketing challenges. The findings underscore the importance of aligning tool selection with organizational goals, as highlighted in prior research that emphasizes the role of strategic planning frameworks in enhancing decision efficacy (Benzaghta *et al.*, 2021) [7]. Furthermore, the study identifies tensions in multi-tier supply chains that may affect the implementation of selected tools, pointing to the necessity of integrating stakeholder perspectives to ensure social sustainability across various platforms (Govindan, Shaw & Majumdar, 2021) [18]. Consequently, the results not only inform the selection process but also contribute to the theoretical understanding of how AHP can effectively streamline strategic evaluations in digital marketing contexts.

Conclusion

In conclusion, the Analytic Hierarchy Process (AHP) presents a robust framework for the strategic evaluation and selection of social media marketing tools, particularly in the context of the increasingly digitalized business environment. The findings from this approach illustrate that organizations can effectively align their marketing objectives with the most suitable social media platforms through a structured decision-making model. This alignment is vital not only for optimizing marketing effectiveness but also for enhancing the overall brand presence in a competitive landscape. As evidenced by the integration of digital practices, such as social media recruitment and HR analytics, organizations are better positioned to leverage digital tools for strategic human resource management, thereby reinforcing their market competitiveness (Milka Rimac-Bilušić *et al.*, 2024). Furthermore, the emphasis on monitoring and evaluating key performance indicators (KPIs) underscores the necessity of a continuous assessment process that informs adaptive strategies in social media marketing (Mtau & Rahul, 2024) [31]. Thus, the adoption of AHP in this domain is essential for informed and agile marketing management. The findings from this research underscore the pivotal role of the Analytic Hierarchy Process (AHP) in the strategic evaluation and selection of social media marketing tools. By systematically decomposing complex decision-making into hierarchical structures, AHP facilitates a comprehensive assessment of various options based on multiple criteria, thus enhancing clarity and effectiveness in strategy formulation (Bhambri & Kautish, 2024) [8, 9]. The results indicate that employing AHP not only improves the alignment of social media tools with organizational goals but also fosters informed decision-making among stakeholders. Furthermore, the exploration of user-generated content and real-time engagement demonstrated their significant influence on public perception and safety branding, especially in contexts such as Ghanas tourism sector, where crime perceptions can hinder growth (Mensah, 2024) [29]. This suggests that integrating advanced analytics within the evaluation framework, as proposed, can bolster the responsiveness of marketing campaigns, allowing for dynamic adjustments in strategy and fostering a more robust marketing framework overall. Future research should prioritize the integration of adaptive methodologies that further refine the Analytic Hierarchy Process (AHP) to accommodate the dynamic nature of social media platforms. Specifically, the exploration of hybrid models that incorporate machine learning techniques could enhance decision-making capabilities by analyzing vast datasets of user interactions and engagement metrics, aligning with findings in contemporary multi-criteria decision-making frameworks (Mastrocinque *et al.*, 2022) [27]. Additionally, cross-sectoral studies that examine the efficacy of AHP in diverse industry contexts would contribute to the understanding of its applicability and limitations within social media marketing. This could be particularly relevant in light of the ongoing shifts in consumer behavior catalyzed by events such as the COVID-19 pandemic, which has underscored the need for flexible marketing strategies. Ultimately, these investigations could yield actionable insights for practitioners seeking to optimize their social media marketing tool selection process amid evolving market conditions (Mohsin *et al.*, 2021) [30].

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