

Search Engine Optimization (SEO) in Online Marketing: A Systematic Literature Review

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Abstract

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Search Engine Optimization (SEO) has become a key element of digital marketing, shaping organic visibility, brand credibility, and customer acquisition. This study presents a systematic literature review (SLR) of SEO research published between 2016 and 2022, focusing on ranking determinants, semantic optimization, cross industry applications, and evaluation metrics. Findings show that on page and off-page factors such as content quality, keyword placement, backlinks, and user engagement remain dominant drivers of rankings, though their influence varies across industries. Semantic SEO, through structured data markup and entity based content, is gaining relevance, but its direct impact on business metrics like conversion rate and customer lifetime value is still underexplored. SEO also extends beyond e-commerce, influencing journalism and academia by reshaping practices for visibility and knowledge dissemination. A growing trend is the integration of SEO indicators with business metrics to align tactical practices with strategic objectives. Despite these developments, gaps remain in standardizing ranking factors, measuring the business value of semantic SEO, and developing integrated evaluation models. These findings emphasize SEO's dual role as both a technical and strategic discipline and highlight the need for further research to strengthen its academic and practical foundations.

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1. Introduction

Search Engine Optimization (SEO) has become a critical pillar in digital marketing, as it determines the organic visibility of brands on search engine results pages (SERPs), which in turn impacts traffic, customer acquisition, and brand equity. Digital marketing literature places SEO alongside other channels such as content marketing, social media, and paid advertising, yet emphasizes that strong organic rankings often provide more sustainable ROI since they are less dependent on direct advertising spending (Chaffey & Ellis-Chadwick, 2019). In practice, research shows that SEO influences various marketing outcomes from market share and brand equity to purchase intentions by enhancing the accessibility of information and perceived credibility when users encounter brands “naturally” through search results (Bhandari & Bansal, 2018).

Technically, the SEO ecosystem continuously evolves in line with algorithm updates and user behavior changes. Empirical studies and reviews highlight both on page and off page factors such as content quality, backlinks, internal linking, and user engagement signals (e.g., clicks and bounce rates) as determinants of ranking, though their relative importance often varies across industries and website types (Zhang & Cabage, 2017; Lewandowski, 2021). In media and journalism, SEO adoption has been shown to influence how journalists write, tag, and structure content to optimize discoverability, demonstrating the cross functional impact of SEO beyond e-commerce (Giomelakis & Veglis, 2016). Moreover, semantic approaches such as entity enrichment and structured data markup have recently gained traction to enhance both machine readability and content relevance (Confetto et al., 2021).

Despite the growing attention, literature from 2016-2022 still reveals gaps: (1) inconsistent findings regarding the relative weight of ranking factors across domains, (2) limited integration of business oriented metrics (e.g., conversion, customer lifetime value) with SEO indicators (e.g., keyword ranking, CTR), and (3) a lack of systematic synthesis linking tactical practices (e.g., semantic markup, internal linking) with long-term marketing outcomes. Recent studies attempt to identify key factors and provide guidelines, but cross industry generalizations remain underdeveloped (Iqbal et al., 2022). Therefore, this systematic literature review aims to map the body of SEO research in online marketing between 2016 and 2022, clarifying determinants of organic visibility, evidence-based best practices, and evaluation metrics that bridge SEO performance with broader marketing objectives.

2. Literature Review

Search Engine Optimization (SEO) has emerged as a strategic pillar in digital marketing due to its ability to generate sustainable visibility and higher return on investment compared to paid advertising. Recent research emphasizes that organic rankings not only reduce dependency on direct advertising spend but also contribute significantly to brand equity and customer acquisition (Erdmann & Ponzoa, 2022). Unlike short-term paid campaigns, SEO is considered a long-term investment that improves the accessibility and perceived credibility of brands encountered naturally on search results.

From a technical standpoint, SEO effectiveness depends on multiple on page and off-page factors, including content quality, keyword integration, website

architecture, backlink quality, and domain authority. Empirical studies confirm that elements such as meta tags, titles, and keyword placement strongly influence rankings, while external link building and social signals often determine competitive positioning across industries (Ziakos et al., 2019; Tsuei et al., 2020). However, the relative importance of these factors remains inconsistent across contexts, highlighting the challenge of creating universally applicable models.

Beyond e-commerce, SEO has had a transformative effect in non commercial domains such as media and academia. In journalism, the adoption of SEO reshapes newsroom practices, where journalists adapt headlines, tags, and content structures to increase visibility, reflecting the growing influence of algorithms on editorial decisions (Lópezosa et al., 2020). Similarly, in the academic domain, SEO strategies are increasingly applied to scientific publications, aiming to enhance discoverability, readership, and citation performance (Schilhan et al., 2021). These examples illustrate how SEO extends beyond marketing to influence knowledge dissemination and media production.

A notable development in recent years has been the shift toward semantic optimization. Structured data markup and entity based content are now considered critical for enhancing machine readability and contextual relevance. Research suggests that schema markup improves the way content is interpreted by search engines, leading to richer search results and improved ranking opportunities (Shayegan & Kouhzadi, 2020). Nevertheless, academic studies directly linking semantic markup to business metrics such as conversion rate or customer lifetime value remain scarce, presenting an area for future research.

Finally, evaluation methods for SEO are evolving. Traditional performance indicators such as keyword ranking and click-through rates are increasingly being integrated with business-oriented metrics, including customer acquisition costs and lifetime value. Saura et al. (2021) argue that data science frameworks can bridge this gap by connecting tactical SEO practices with downstream marketing performance through analytics and attribution models. However, systematic applications of these frameworks within SEO research between 2016 and 2022 remain underdeveloped, leaving open questions on how best to link tactical optimization with strategic business outcomes.

3. Methods

This study adopts a systematic literature review (SLR) approach to provide a comprehensive synthesis of existing research on Search Engine Optimization (SEO) in the context of digital marketing between 2016 and 2022. The SLR method was chosen because it ensures transparency, replicability, and rigor in identifying, selecting, and analyzing relevant studies. Data for this review were collected from academic databases including Google Scholar, Scopus, Web of Science, and IEEE Xplore by using a combination of keywords such as “Search Engine Optimization”, “SEO factors”, “semantic SEO”, “digital marketing SEO”, and “SEO performance metrics”. Boolean operators (and/or) were applied to refine the searches and capture studies that examine both technical and business perspectives of SEO.

To ensure relevance and quality, inclusion criteria were applied, focusing on peer-reviewed journal articles, conference proceedings, and book chapters published

between January 2016 and December 2022 that discussed SEO determinants such as on page optimization, off-page factors, and semantic approaches and their relationship with marketing performance. Studies were excluded if they were non academic sources (e.g., blogs or reports), written in languages other than English, or published prior to 2016 unless used as theoretical background.

After the selection process, the identified articles were systematically analyzed to extract information on research objectives, methods, findings, and gaps. The analysis categorized studies into major themes, including SEO ranking factors, semantic optimization practices, cross industry applications, and evaluation metrics that link SEO performance to business outcomes. A qualitative thematic analysis was then carried out to identify patterns, contradictions, and emerging trends across the literature. To improve reliability, articles were screened through multiple rounds, and validity was reinforced by triangulating sources and comparing findings across different databases.

4. Results and Discussion

The findings of this systematic literature review highlight several key trends and gaps in SEO research between 2016 and 2022. First, the analysis reveals that on page and off page optimization remain the dominant factors influencing organic visibility. Content quality, keyword placement, and site architecture continue to play critical roles in ranking, while external factors such as backlinks and social signals maintain strong but variable effects depending on the industry context (Ziakos et al., 2019; Tsuei et al., 2020). Despite this, there is no consensus on the relative weight

of these factors across different domains, indicating that SEO strategies must remain context specific rather than universally standardized.

A second finding concerns the emergence of semantic SEO. Studies show that structured data markup and entity based content significantly improve machine readability, leading to enhanced discoverability and richer search results. This shift reflects a broader transition from keyword driven optimization to context- and meaning-driven practices. However, while semantic SEO demonstrates technical benefits, few studies directly measure its contribution to marketing outcomes such as customer lifetime value or conversion rates, leaving a notable research gap (Seyfabad et al., 2019).

The third theme emerging from the review is the cross industry application of SEO. Evidence from media and journalism highlights how SEO adoption reshapes newsroom practices, compelling journalists to tailor headlines, tags, and article structures to improve search visibility (Lópezosa et al., 2020). Similarly, in academia, SEO practices often termed academic SEO are increasingly used to enhance the discoverability and citation potential of scholarly publications (Schilhan et al., 2021). These findings underscore SEO's influence beyond e-commerce, extending its role to knowledge dissemination and institutional visibility.

Finally, the review finds that evaluation frameworks for SEO are evolving. Traditional indicators such as rankings and click-through rates are being integrated with business-oriented metrics, including conversion rates, customer acquisition costs, and lifetime value. This integration has been advocated as a way to better align SEO performance with broader marketing objectives (Saura et al., 2021).

Nonetheless, empirical research that systematically links tactical SEO practices to strategic business outcomes remains scarce. This suggests an urgent need for future studies to develop models that bridge the gap between technical SEO indicators and long-term marketing performance.

In summary, the review confirms that SEO continues to be a strategic driver of visibility and brand credibility in digital marketing, but it also identifies key areas requiring further exploration. The lack of consensus on ranking factors, the limited integration of semantic optimization with business metrics, and the underdeveloped frameworks connecting SEO practices with long-term outcomes remain critical gaps in the literature. Addressing these issues would not only advance academic understanding but also provide practitioners with more reliable guidelines for sustainable SEO strategies.

5. Conclusion

This study confirms that Search Engine Optimization (SEO) remains a fundamental driver of digital marketing success, providing sustainable visibility, credibility, and return on investment compared to paid channels. The systematic review of research published between 2016 and 2022 demonstrates that both on page and off page factors such as content quality, keyword placement, site structure, backlinks, and social signals continue to play significant roles in determining organic rankings. However, their relative importance varies across industries, highlighting the necessity of context specific SEO strategies.

The findings also reveal the growing relevance of semantic SEO, particularly through structured data markup and entity-based content, which enhance machine readability and improve the relevance of search results. Yet, despite its technical promise, there is still limited empirical evidence connecting semantic practices directly to marketing performance outcomes, such as conversion rates and customer lifetime value. This indicates a crucial gap for future research.

Moreover, SEO's influence is shown to extend beyond e-commerce into sectors such as journalism and academia, where optimization practices affect how information is structured, disseminated, and consumed. At the same time, the evolution of SEO evaluation frameworks toward integrating technical indicators with business metrics reflects the increasing need to align tactical optimization with strategic marketing goals.

In conclusion, SEO continues to evolve as both a technical and strategic discipline, with its impact spanning multiple industries. However, future studies must address the unresolved challenges of standardizing ranking factors, measuring the business value of semantic SEO, and developing integrated models that connect optimization practices with long-term marketing performance. Addressing these gaps will strengthen the theoretical understanding of SEO while providing practitioners with actionable insights for building more effective and sustainable digital strategies.

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