
A Dual-Focused Approach to E-Commerce Product Ranking: Leveraging Search Engine Optimization and Search Engine Marketing

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ABSTRACT

E-commerce platforms and Websites use search engine optimization (SEO) and search engine marketing (SEM) to enhance ranking on search engines. SEO involves improving the website's organic visibility of search engine results. In contrast, SEM is critical in enhancing website visibility through sponsored ads. Product ranking is significant in e-commerce platforms for improving sales, and traditional research is not focused on e-commerce product ranking. This research presents a novel methodology for enhancing product rankings on the Amazon.com platform by combining SEO and SEM strategies. Unlike previous approaches that typically focus on either SEO or SEM in isolation, our method integrates both strategies to address the competitive nature of e-commerce platforms. The novelty of this approach lies in its dual-focus strategy, which harnesses the strengths of both organic and paid search optimizations. Combining the long-term benefits of SEO, which improves organic visibility through content optimizations, with the immediate impact of SEM, which leverages targeted paid advertisements, achieves superior product ranking results. The proposed methodology has been mathematically validated, demonstrating a significant improvement in product rankings from page 5 to page 1 on Amazon's search results.

Keywords: E-commerce, Search Engine Optimization, Search Engine Marketing, Pay per click, Product Ranking

Introduction

The world wide web consists of millions of websites, where users find relevant content by entering keywords into search engines. SEO involves systematically modifying a website to enhance its visibility in search engine results, often by adjusting website architecture and content to make the site more accessible. This gradual process requires ongoing adjustments to maintain effectiveness as search algorithms evolve [1]. The rise of e-commerce and the ongoing technological advancements have made online shopping increasingly popular, leading to the widespread adoption of SEM, which focuses on improving product visibility through paid advertising strategies. Unlike SEO, which optimizes organic rankings, SEM enhances visibility through automated and sponsored advertisements, making it a critical tool for achieving immediate results on e-commerce platforms [7]. In the current digital marketing landscape, the popularity of SEO is particularly noteworthy in the context of e-commerce. The intense competition among e-commerce platforms is driven by the pursuit of maximizing product profitability, which necessitates securing top positions in search engine results. Achieving these top positions is essential for generating new leads and attracting organic traffic, which directly influences sales velocity on e-commerce platforms [4]. While earlier research primarily focused on enhancing website visibility using white-hat SEO techniques on general search engines like Google and Yahoo [2], these approaches have proven inadequate in

addressing the dynamic and competitive nature of e-commerce, resulting in suboptimal product ranking and visibility.

This research proposes an innovative method that integrates both SEO and SEM strategies to overcome the limitations of current techniques. The combined approach is designed to be more adaptive and effective in the fast-paced e-commerce environment, leveraging the strengths of both SEO's organic ranking capabilities and SEM's paid advertising advantages. By integrating these strategies, the proposed method significantly enhances product visibility and ranking on e-commerce platforms, ensuring that products are effectively showcased to potential customers. The unique feature of this method lies in its ability to synergize SEO and SEM to improve product rankings from lower pages to top positions, as demonstrated in the case study on Amazon.com, where product rankings improved from page 5 (P5) to page 1 (P1).

The remainder of this paper is organized as follows: Section 2 presents a comprehensive literature review, analyzing existing research on SEO and SEM techniques and their applications in e-commerce. Section 3 details the proposed methodology, explaining the integration of SEO and SEM strategies, the selection of the e-commerce platform, and the implementation steps involved. Section 4 provides the results and discussions, offering a thorough analysis of the outcomes and comparing the performance of the proposed method against existing techniques. Finally, Section 5 concludes the paper by summarizing the key findings, outlining the contributions of the research, and suggesting potential directions for future work.

1. Literature Review

In 2022, the authors aim to increase website traffic through white-hat SEO [3]. The research concentrated only on journal websites that had not previously utilized SEO, employing keyword-based optimization in the paper title, meta tags, and content. The study proved notably effective in enhancing the discoverability of scholarly journals. Similarly, the research was conducted to boost website ranking with On-Page and Off-page SEO optimization techniques. In another research work presented in 2023, the authors focused on enhancing the visibility of the Umah Multi website [2]. Both on-page and off-page SEO strategies were applied to the website. A comparative analysis of the two SEO strategies revealed that on-page SEO is more effective in achieving the highest search engine index for the website in contrast to off-page SEO. A novel SEO approach is presented by researchers where four strategies, namely keyword-based, content-based, backlinks-based, and web page directory-based optimization, are implemented in the website management system [4]. These strategies demonstrated improvements in the website's position on search engine result pages. Md Imorse and his team published research for product ranking in e-commerce [6]. The research work introduced an algorithm with the aid of the A9 algorithm and various SEO concepts to rank the products on an e-commerce platform.

Authors further presented a methodology that investigates how SEO influences the ranking of search engines, the behavior of consumers, and the revenue of search engines [7]. It further explores the trade-offs between investments in SEO and sponsored links, assessing the overall effects on consumer satisfaction, advertiser profits, and search engine revenue. A study presented in [8] aimed to enhance the visibility and ranking of products by leveraging SEO tactics to improve organic traffic and sales conversion rates. Authors developed an algorithm that ranks e-commerce brands by analyzing user evaluations and sentiments expressed in online reviews. The algorithm enhances the accuracy and effectiveness of brand ranking by incorporating user sentiment polarity and activity metrics [9]. Moreover, research work focused on the implementation and effectiveness of digital marketing techniques in increasing brand awareness, and boosting sales for three major e-commerce companies: Decathlon, Amazon, and ASOS [4]. The researchers briefly explored and analyzed the strategies and tools of SEO and SEM, with the aim of enhancing website visibility, increasing organic traffic, and improving overall digital marketing effectiveness [11]. A novel study regarding brand ranking was presented in [12]. The study aimed to develop a product rank-based search engine that aggregates and filters products from multiple e-commerce websites to present the best deals to customers in real time.

A study by Berman and Katona in 2012 found that the use of both organic and paid search strategies can result in improved website visibility and higher conversion rates. They discussed which approach takes less time to rank with the help of their algorithm. The study highlighted that while SEO drives organic traffic, SEM can significantly amplify website visibility by targeting specific keywords [14]. Moreover, research underscores the importance of conducting in-depth surveys and empirical studies to optimize the combined use of SEO and SEM strategies. These studies emphasize the need for continuous adaptation and refinement based on user behavior and platform changes. A survey conducted by Baye and Morgan demonstrated that a nuanced understanding of SEO

and SEM is crucial for maximizing the return on investment (ROI) in digital marketing campaigns. [15]. Table 1 briefly summarizes the literature regarding the adopted strategies: SEO, SEM and keyword-based optimization, and e-commerce platform. It also highlights the strategies used in the proposed methodology. The proposed methodology differs from the existing literature as it adopted SEO and SEM in a combined manner to rank the product on an e-commerce platform.

As the popularity of online shopping continues to grow, it becomes more and more critical as a way for people to buy and sell things over the internet. This is also known as e-commerce. Every day, there is more and more information available online about products that people can buy through those e-commerce platforms [16][17][18]. This information includes what the products are made of and what other customers think about them, as well as details regarding product features and product reviews. This information helps people make good choices when they want to buy thin. People usually look at things like how much the product has sold, its ratings, what other customers say about it, and its features. However, because there is so much information, it can be challenging for people to find what they need [19]. That's where product ranking comes in. It helps people find what they want faster. Product ranking isn't just good for people who are buying things; it also helps businesses. It makes it easier for people to decide what to buy and gives businesses important information about what customers like and how they can improve their products [20]. Previous research showed that making products more accessible to find and rank can make a difference for online shoppers and big e-commerce companies like Amazon [21].

Table 1: Overview of literature and proposed work

Study	Focus	SEO Strategies	SEM Strategies	ecommerce Product Ranking	Novelty/Findings
[3]	White-hat SEO for journal websites	Keyword-based optimization in paper titles, meta tags, and content	None	No	Demonstrated the effectiveness of white-hat SEO in enhancing traffic for previously unoptimized journal websites.
[2]	Website ranking enhancement	On-Page and Off-Page SEO	None	No	Comparative analysis revealed that On-Page SEO is more effective than Off-Page SEO for websites. Focused solely on SEO without incorporating SEM strategies.
[4]	Website management system optimization	Keyword-based, content-based, backlinks-based, and directory-based SEO	None	No	Introduced an SEO approach that improved the website's position on search engine results pages. The study only focuses on SEO.
[6]	Product ranking in e-commerce	Algorithm-based SEO using A9 and various SEO concepts	None	Yes	Developed an algorithm to enhance product rankings on e-commerce platforms using SEO techniques. The research focused

					exclusively on SEO without considering SEM's impact.
[7]	SEO's influence on search engine ranking, consumer behavior	Analysis of trade-offs between SEO investments and sponsored links	None	No	Explored the effects of SEO and sponsored links on consumer satisfaction, profits, and search engine revenue without combining the two strategies.
[8]	Product visibility and ranking enhancement	SEO tactics to improve organic traffic and sales.	None	Yes	Enhanced product visibility and rankings through SEO alone.
[9]	E-commerce brand ranking algorithm	Analysis of user evaluations and sentiment in online reviews	None	Yes	Developed an algorithm to improve brand ranking accuracy using user sentiment and activity metrics via SEO. Did not explore the potential benefits of SEM.
[12]	Real-time product rank-based search engine	Aggregation and filtering of products using SEO	None	Yes	Created a product rank-based search engine focusing solely on SEO. The study did not incorporate SEM strategies to enhance product visibility.
[15]	SEO and SEM can improve website visibility.	Trade-offs between investing in SEO or SEM.	Yes	No	Created a U-shaped inverse algorithm to see results and cost efficiency.
[14]	Survey on SEO and SEM integration.	Emphasis on continuous SEO.	Focused on SEM's role in boosting visibility	Yes	Highlighted the importance of regularly updating SEO and SEM strategies to maximize ROI and remain competitive in e-commerce.
Proposed Methodology	Comprehensive e-commerce product ranking strategy	Integrated SEO strategies: content optimization, keyword	Integrated SEM strategies: paid ads, retargeting, and	Yes	Unlike previous studies, our work combines SEO and SEM in a systematic, designed for dynamic e-commerce environments.

placement, and conversion
 competitor tracking.
 analysis

2. Proposed Methodology

Many e-commerce platforms exist, such as Amazon, eBay, Walmart, Shopee, Lazada, and Noon. E-commerce platforms and other sites use SEO and SEM to rank. In simple websites, mostly the keywords play the deciding role to get ranked. In contrast, in E-commerce platforms, there are many other factors to decide the ranking, including (i) keywords, (ii) relevancy, (iii) conversion rate, and (iv) customer satisfaction and reviews. In the proposed research, we have combined the two approaches, SEO and SEM, to achieve the product ranking goal. In this regard, extensive datasets are extracted from e-commerce platforms, including user interaction data, product performance metrics, competitor analysis, and niche analysis. Figure 1 shows all the stages we adopted in the proposed methodology.

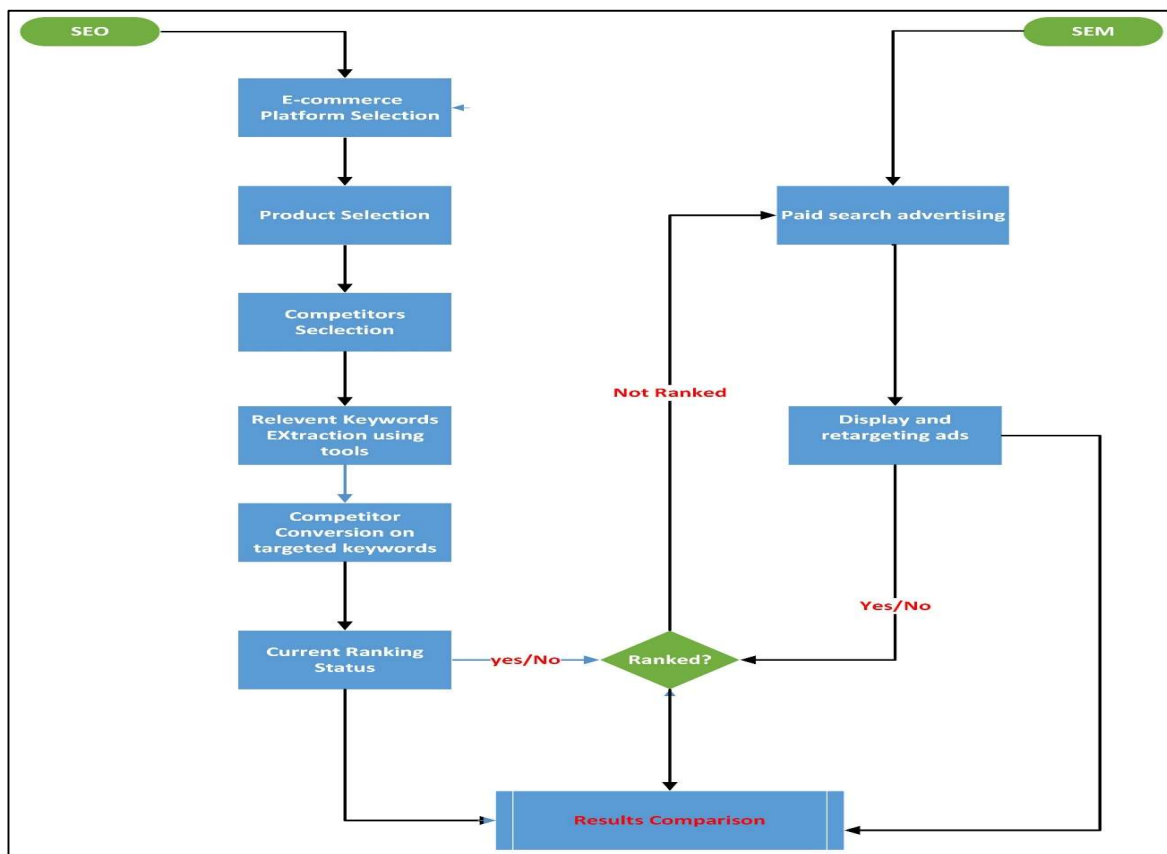


Fig 1: Proposed SEO and SEM Methodology

SEO Implementation

The initiation of our methodology involves on-platform optimization. During this phase, users will be granted complete access to a brand page or a product page, allowing them to implement any required adjustments to the front end or backend, including the strategic placement of keywords wherever it is needed, such as the title tag, meta tags, internal links, and additional metadata and description. As written above, the SEO optimization includes various steps. Among all keywords, identification is the most crucial task. Here are some tasks we will adopt for the implementation of SEO.

- a) E-commerce platform and product selection
- b) Keyword planning and selection
- c) Current ranking identification

Implementation of SEO techniques on the back end and front end. Platform Selection: In this study, we have selected the Amazon platform (i.e., amazon.com) and a product named elevated dog bowls from the pet category.

2.1. Keyword Planning and Selection:

Keywords are selected based on search volume and their conversion rate. Phrases utilized by individuals to locate your company, services, product, or brand online are known as keywords. Preparing keywords for products in advance empowers an organization to reach its customers quickly when they search for your product or service. Noteworthy, the selection of keywords depends on the e-commerce platform we choose. Researchers use the Cerebro, Magnet, Merchant Words, and Viral Launch tools to extract the keywords and the competitor information for platforms including eBay, Walmart, and Amazon [13]. Figure 2 shows the list of keywords obtained using Cerebro and Magnet tools for our selected product.

Keyword Phrase	ABA Total Click Share	ABA Total Conv. Share	Keyword Sales	Magnet IQ Score	Search Volume	Search Volume Trend
dog bowls	22%	14.9%	1,988	19,363	96,814	9% ↑
pets	25.6%	1.4%	817	1,044	83,509	23% ↑
slow feeder dog bowls	28.4%	10%	2,644	36,644	73,288	-2% ↓
elevated dog bed	39.9%	13.2%	482	39,880	39,880	12% ↑
dog bowl	23.7%	18.5%	1,009	6,760	33,800	5% ↑
elevated dog bowls	19.6%	15.1%	531	33,774	33,774	5% ↑
dog bowls elevated	19.1%	13.3%	374	31,680	31,680	0
dog water bowl	23%	15.1%	807	5,279	31,675	7% ↑
cat food bowl	21.2%	17.7%	400	6,329	31,646	18% ↑

Fig 2: Keyword obtained via Cerebro and Magnet

After checking the competitor conversion, a few keywords were selected, including elevated dog bowls, heavy dog bowls, weighted pet bowls, and raised dog bowls.

2.1. Current Ranking Identification:

A structured methodology was implemented to evaluate the current ranking of the product for the specified keywords on Amazon. The process involved logging into Amazon.com, inputting the target keywords into the search bar, and meticulously examining the search results for the product’s presence in both organic listings and sponsored placements. This procedure was repeated for each keyword to ensure comprehensive coverage. Following this analysis, it was determined that the product did not appear in either organic or sponsored rankings for any of the keywords tested. This finding underscores the need for strategic adjustments to enhance the product’s visibility and ranking on the platform.

2.1. SEO Techniques Implementation of Front End and Back End:

SEO techniques are applied to the product to increase the product's visibility on the Amazon platform. Three tasks are carried out for SEO implementations: (i) front-end optimization, (ii) back-end optimization, and (iii) image optimization.

Front-end optimization includes optimizing the product's title, bullet points, and description. It includes crafting a clear, concise, and keyword-rich product title that captures the product's essential features and relevant search terms. Bullet points highlight the product's key product features and unique selling points (USP). Five bullet points are added, and they should be clear and concise and include relevant keywords. Additionally, writing a detailed, informative, and engaging product description elaborates on the product’s features and benefits and naturally incorporates keywords improves searchability.

Back-end optimization involves refining elements that are not visible to customers but are crucial for Amazon’s search algorithm. This includes filling out the search term fields in the back end of the product listing with relevant keywords that customers might use to find your product. Image optimization is crucial for attracting customers and improving conversions. Amazon recommends using high-resolution images clearly showing the product, with a minimum width or height of 1000 pixels to enable the zoom feature.

Fig 3 shows the product's title optimization on Amazon Seller Central. Title optimization is important in improving the product and attracting potential buyers. To craft an effective title, one or two top-performing keywords needed to be added along with the brand name and some product specifications.



Fig 3: Product title optimization on Amazon Seller Central

Optimizing product descriptions and bullet points on Amazon is crucial for enhancing your product's ranking and attracting customers. In the product description, detailed and engaging content must be product in a clear and conversational tone. Relevant keywords are added to improve searchability without overloading the text. In the bullet points, the most crucial bullet with the main keyword needs to be explained, followed by additional features, benefits, and unique selling points. By combining an engaging description with clear and informative bullet points, the value of the product can effectively be conveyed and improve its visibility and appeal on Amazon. Fig 4 elaborates on the description and bullets of the product as shown in the image.

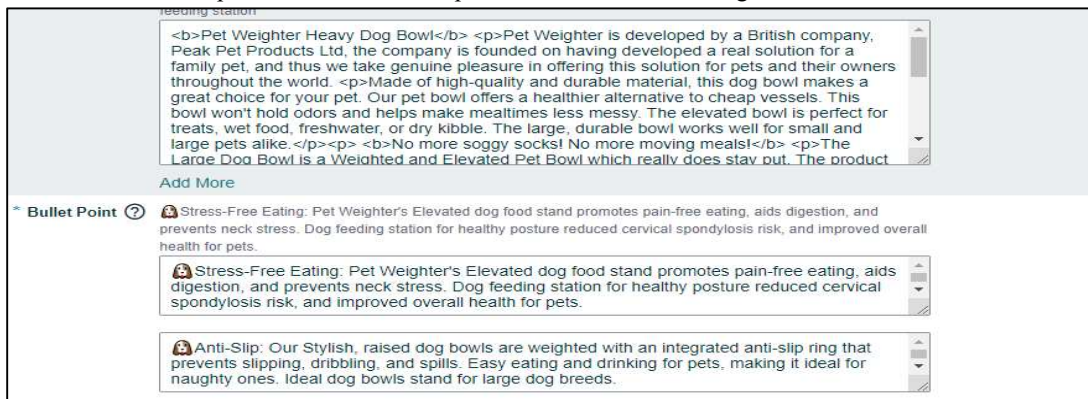


Fig4: Product Description and Bullets

SEM Implementation:

SEM is a marketing strategy used to increase a website's visibility on search engine results pages (SERPs) through paid advertising. SEM involves purchasing ads that appear when users enter specific keywords into search engines. These ads, often known as pay-per-click (PPC) ads, are strategically placed to target potential customers based on their search queries. By bidding on relevant keywords, businesses can ensure their ads appear prominently, driving targeted traffic to their websites or product pages if the strategy is applied to the e-commerce platform. Our approach involves the Amazon platform for SEM implementation. SEM implementation involves two primary approaches.

Paid Search Advertisement

For implementing SEM, PPC is being set up on the selected keywords discussed above in the SEO implementation section. Weekly insights, including keyword selection and bid management, are studied to optimize PPC campaigns.

Display and retargeting ads:

Display advertisements appear on various parts of the Amazon platform. These ads can feature images, videos, and text to attract potential customers' attention. The purpose is to increase brand visibility and drive traffic to product listings on the Amazon search engine. The advertisements that perform the best are retargeted. Businesses can use several types of SEM advertising to reach their target audience and achieve their marketing goals. The most common type is search ads, which appear on search engine results pages when users enter relevant keywords. Display ads are another form consisting of banner, image, or text ads that appear on Amazon search pages based on their interests and browsing behavior. Each ad type has unique advantages and can be strategically used to enhance brand visibility, drive traffic, and increase conversions. SEM advertisement campaigns for the targeted keywords are shown in Figure 5.

Active	Campaigns	Impressions	Top-of-search IS	Clicks	CTR	Spend	CPC	Orders	Sales	ACOS
	category	48,619	<5%	69	0.14%	\$89.19	\$1.29	6	\$197.94	45%
	auto-new-lyg	21,034	<5%	52	0.25%	\$46.08	\$0.89	8	\$263.92	17%
	large-lyns	34,438	<5%	86	0.25%	\$88.30	\$1.05	4	\$131.96	66%
	spd	6,613	—	12	0.18%	\$12.57	\$1.05	—	—	—
Totals for 4 Campaigns		110,704		219	0.20%	\$236.14	\$1.08	18	\$593.82	39%

Fig 5: SEM advertisement campaigns for the targeted keyword

3. Results and Discussions

The previous section implemented SEO and SEM methodology, and based on this, the proposed solution is intended to boost the product's ranking, pet-weightier elevated dog bowls. The tools used to determine how well the product performed after applying SEO and SEM techniques are based in the USA market. To track the brand's performance, we used the following tools.

1. Tracking sales by Seller board
2. Conversions analysis via Amazon reports
3. Keywords ranking tracking

Amazon advertising is also sometimes called as a pay-per-click (PPC) and it is a part of SEM. From SEO major details related to the keywords are extracted whereas in SEM, amazon advertising is performed. Fig 6 represents Amazon advertising campaign's performance metrics results for May, indicating total spend, sales, impressions, and Advertising Cost of Sales (ACOS).



Fig 6: Campaign results after the applied strategy

A line graph depicting the daily spending trend throughout May accompanies these metrics. The y-axis of the graph represents the daily expenditure in dollars, while the x-axis denotes the days of the month. The graph reveals fluctuations in daily spending, characterized by noticeable peaks, which suggest varying levels of advertising activity or adjustments in bid strategies during the month. This visual representation aids in understanding the evolution of daily expenditures and highlights changes implemented throughout the campaign. The campaign incurred a total expenditure of \$1,339.21, representing the financial investment in Amazon's advertisements. This investment yielded a revenue of \$2,465.20, indicating the direct sales generated due to the advertising efforts. The impressions metric demonstrates the campaign's reach, displaying the ads 542,909 times to potential customers. Impressions measure the frequency with which the advertisements appear on users' screens, reflecting the campaign's visibility. The efficiency of the ad spend is illustrated by the ACOS, calculated as the total ad spend divided by the total sales and multiplied by 100. This metric is crucial for evaluating the cost-effectiveness of the advertising strategy.

Table 2 shows the results extracted from the seller board tool for the selected pet brand. It verifies that sales and impressions increased after applying the proposed methodology, resulting in improved product ranking. For

evaluating the profitability and improvement in the ranking, the detailed financial breakdown is studied for May, highlighting the key metrics. The total sales for the discussed period is \$3,127.86 from 91 units sold. After accounting for all these expenses, the gross profit stood at \$404.73. Notably, no additional costs were recorded, leading to a net profit equal to the gross profit, also \$404.73. This financial overview underscores the importance of managing advertising spend, minimizing refunds, and optimizing Amazon fees to enhance profitability.

Table 2: Seller board Results after applied strategy

Month to date	Amount (\$)
May 1 – May 31, 2024	
Sales	3127.86
Units (in Pcs)	91
Advertising Cot	559.74
Refund Cost	96.60
Amazon Fees	1488.19
Cost of Goods	578.60
Gross Profit	404.73
Expenses	0.0
Net Profit	404.73

Table 3 shows the results from the Amazon search Engine and that keywords are ranked organically and on sponsored. The keywords analyzed include "Heavy dog Bowl," "Weighted Dog Bowls," "weighted pet bowls," "raised dog bowl," and "weighted dog bowl large." For the keyword "Heavy dog Bowl," the product ranks 6th on the first page (6P1) organically and 1st on the first page (1P1) in sponsored listings. Similar strong performance is seen with "Weighted Dog Bowls" and "Raised Dog Bowl," where the product also ranks 6P1 and 1P1, respectively, demonstrating effective sponsored ad placement. However, for "weighted pet bowls," the product ranks 47th on the first page (47P1) and does not appear in sponsored listings (NA), indicating a potential area for improvement. The keyword "weighted dog bowl large" ranks 6P1 organically and 3P1 in sponsored ads.

Table 3: Amazon search engine keyword results

Keywords	Organic Ranking	Sponsored Ranking
Heavy dog bowl	6P1	1P1
Weighted dog bowls	7 P1	1P1
weighted pet bowls	47 P1	NA
raised dog bowl	6 P1	1P1
weighted dog bowl large	6P1	3P1

Validation for Ranking and optimizing ranking score

Consider the ranking function RM, which depends on four factors: keyword relevance KR, conversion rate CR, customer satisfaction SS, and bid amount BRA. The ranking score can be expressed as a weighted sum:

$$RM = w1 \cdot KR + w2 \cdot CR + w3 \cdot SS + w4 \cdot BRA \tag{1}$$

Where w1, w2, w3, and w4 are the weights assigned to each factor, KR represents keyword relevance, CR represents the conversion rate, SS represents customer satisfaction, and BRA represents the bid amount in SEM.

$$\Delta R = RM \text{ final} - RM \text{ initial} \tag{2}$$

Meanwhile, RM initial is the sum of initial weights, and RM Final is the sum of final weights. Applying the formulas to improve the product's ranking on the e-commerce platform verified that the combined SEO and SEM strategies effectively enhanced the product's visibility and ranking on Amazon search engine. This mathematical

verification aligns with the previously discussed theoretical findings, where the product's ranking improved from page 5 to page 1 on Amazon's search results.

Results Comparison:

This comparative analysis demonstrates that the proposed methodology outperforms existing state-of-the-art techniques, specifically within the context of e-commerce platforms, where competition and complexity are higher. The combined SEO and SEM approach provides a more comprehensive solution for enhancing product visibility and sales on e-commerce platforms, justifying its superiority over other methods used on simple websites and e-commerce platforms. Table 3 describes the comparison between the proposed method and the state-of-the-art approaches in the past.

Table 3: Comparison of proposed method with state of art approachesStudy	Methodology	E-commerce Platform or Simple Website	Ranking Improvement (ΔR)	Visibility Enhancement (Impressions)	Conversion Rate (CR)
[3]	White-hat SEO	Simple Website (Journal websites)	Moderate improvement	Moderate increase	2% increase
[2]	On-Page and Off-Page SEO	Simple Website	Moderate improvement	Moderate increase	2.5% increase
[4]	Multi-faceted SEO	Simple Website (Website management system)	Significant improvement	Significant increase	3% increase
[6]	Algorithm-based SEO using A9	E-commerce Platform	Significant improvement	Significant increase	3.2% increase
[7]	SEO and Sponsored Links	Simple Website	Low improvement	Low increase	1.5% increase
[8]	SEO for Product Visibility	E-commerce Platform	Significant improvement	Moderate increase	3.5% increase
[9]	Brand Ranking Algorithm using SEO	E-commerce Platform	Significant improvement	Significant increase	3.8% increase
Proposed Methodology	Combined SEO and SEM	E-commerce Platform (Amazon)	High improvement (from page 5 to page 1)	High increase (Impressions: 542,909)	5% increase

4. Conclusion:

Securing a prominent position in search engine results is crucial for e-commerce success in the rapidly evolving digital marketplace. This research has demonstrated that combining SEO and SEM offers a highly effective strategy for improving product rankings on the Amazon platform. By integrating SEO, which enhances organic visibility through content optimization and keyword management, with SEM, which boosts immediate visibility via targeted paid advertisements, our proposed methodology has proven its effectiveness. The empirical results show a significant advancement in product ranking, moving from page 5 to page 1 on Amazon’s search results. This outcome highlights the potential of a dual-focused approach to drive traffic and enhance conversion rates and overall sales. Moreover, our comparative analysis with existing state-of-the-art methods underscores the superiority of the combined SEO and SEM approach, particularly in the competitive e-commerce environment

where dynamic ranking algorithms pose continuous challenges. The study validates that SEO and SEM can outperform traditional single-focus methods, offering a robust solution for businesses aiming to maximize their digital presence. Future research should explore extending this combined methodology to other e-commerce platforms, potentially broadening its applicability and ensuring sustained competitive advantage across various digital markets. Acknowledgment

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