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Empowering Village Coffee Farmers through Website Optimization with Predictive RankMath SEO

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ABSTRACT

This research is motivated by the low visibility and limited marketing of Kopi Kobaki MSME products, managed by the Kobaki Coffee Farmers Association in Banten. Although the community has significant potential to produce high-quality local coffee, the lack of digital literacy and online marketing efforts has caused sales to rely mainly on local intermediaries. This study aims to develop a village economic model based on a website integrated with predictive SEO strategies using the RankMath plugin, expand the market, and support farmers' economic independence. The research methods include needs analysis through surveys and interviews, website design and development using the WordPress platform, implementation of on-page and off-page SEO, and monitoring and evaluation through Google Search Console. The research results show that the kopikobaki.com website can increase the digital visibility of village coffee, even in communities with low digital literacy. The integration of a user-centered design approach, RankMath Pro optimization techniques, and Google Search Console metrics-based evaluation results demonstrates strong digital performance with high CTR and competitive search positions. These findings demonstrate that website-based digitalization can be an effective model for strengthening marketing, improving farmers' digital literacy, and supporting village economic independence through the use of sustainable technology.

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1. Introduction

The coffee farmers' association in Leuweung Adat Kasepuhan Karang, Lebak, Banten, is a united group of farmers forming a joint business that is now known as MSMEs (Micro, Small and Medium Enterprises). MSMEs are a crucial pillar of Indonesia's economy, creating jobs, increasing community income, and supporting economic equality. However, in the digital era, many MSMEs face challenges in online marketing; low digital literacy and limited use of websites and SEO as marketing media make it difficult for their products to be widely recognized, and they still rely on local collectors Arjang [1] This condition is experienced by the Kobaki Coffee Farmers' Association in Jagaraksa Village, Lebak Regency, Banten, which has good coffee quality but lacks marketing reach, still using traditional marketing methods

and not utilizing digital markets like websites. This research was made possible through a grant from the Directorate General of Research and Community Service, Ministry of Education, Science, and Technology.

The urgency of this research arises because, in Jagaraksa Village, the Kobaki coffee farmers' harvests are abundant with good quality, but they are unable to penetrate local and regional markets. This is where digital marketing and SEO strategies come in, which can open up access to larger markets and increase the competitiveness of MSMEs. Business success in the digital era is heavily determined by their ability to understand the ever-evolving dynamics of SEO, implement ethical and transparent SEO practices, and adjust marketing strategies to technological developments and consumer behavior. Thus, SEO is not just a technical tool, but also a strategic element in building a sustainable and competitive digital presence Ghouse [2]. Several studies support this, such as the research Ferdinand [3], which states that a website system can be considered successful if it scores 100% in functionality testing and operates smoothly, proving the effectiveness of SEO implementation. Additionally, research on the impact of digital marketing and product quality on MSME sales in Depok shows that digital marketing is effective in increasing sales Lailla [4]. A study in Sumenep Regency also found that SEO and social media have a significant positive impact on the success of MSME digital marketing campaigns Zakki [5] Firmansyah's [6] research Samudro shows that using websites as a promotional platform can expand market reach and improve digital understanding among MSME actors. Based on previous research and ongoing studies, this research aims to develop a village economy model based on websites and predictive SEO for the Kobaki Coffee Farmers' Association, with the hope of empowering coffee farmers to improve their economic level and digital literacy.

Several studies in Indonesia have examined the application of SEO on websites to improve keyword visibility. According to Nysbahrul [7], the research results show a significant improvement after implementing SEO, with improved keyword rankings and an increase in organic visitors. A correlational analysis also shows a positive relationship between SEO scores and user visit duration. These findings prove that On-Page SEO strategies are effective in improving the visibility and performance of MSME promotional websites digitally. A similar conclusion was drawn by Untari [8] in her research, which shows that website optimization can help increase people's interest in visiting the website, which will impact the increased recognition of MSMEs in promoting their products. The research results show that the application of organic and inorganic SEO techniques successfully improved the website's ranking from being unlisted to fourth position on the first page of Google search results. This website now provides better visibility for MSMEs in Karangpranti Village, expanding their market reach to regional and national levels. Thus, this program proves that the use of digital technology and the right marketing strategy can drive village economic progress and increase MSME competitiveness in the global market Abrory [9]. Research by Purnomo [10] states that using website development methods that apply SEO techniques can produce a business website that can be used to display business profiles and business searches indexed by Google, resulting in a digital marketing model that works better than conventional marketing.

Based on the literature review, several gaps that have not been extensively studied or have received less attention, particularly relevant to the Kobaki Coffee research, are:

a. Very few studies have explored SEO plugins beyond Yoast, such as RankMath or new plugins with predictive/AI features. All the literature found tends to focus on using Yoast or standard optimization methods (on-page, meta tags, backlinks), rather than predictive analysis with modern plugins or AI;
b. The direct impact on MSME sales is still under-quantified in many studies. Many focus only on visibility, traffic, and keyword rankings, rather than measuring the extent to which SEO optimization directly increases sales or revenue;
c. High-quality backlinks and external collaborations (news portals, communities, local media) as a source of off-page SEO strength have not been extensively studied in specific local contexts. Many studies focus on on-page SEO and social media, while off-page strategies involving local partners or news portals are rarely discussed;
d. Short implementation and monitoring durations. Some studies report results within weeks or two months; there is a lack of long-term monitoring research to observe consistency in rankings, CTR, impressions, and long-term effects on *revenue*.

The main objective of this research activity is to develop a digital-based village economy model through the utilization of a website integrated with predictive Search Engine Optimization (SEO) strategies to increase the visibility and competitiveness of Kobaki Coffee MSME products. This website is expected to serve as a digital showcase, promotional platform, and sales channel for coffee products managed by the Kobaki Coffee Farmers' Association in Jagaraksa Village, Lebak Regency, Banten Halimatussadiah [11]. This research also aims to improve the digital literacy of coffee farmers so they can manage the website, understand digital marketing strategies, and utilize information technology as a tool for economic empowerment. To achieve these objectives, a structured problem-solving plan is implemented through several stages. First, a needs analysis is conducted through surveys and interviews with association members

to understand their digital literacy, marketing constraints, and expectations for a digital platform. Second, the website is designed and developed using WordPress, equipped with predictive SEO plugins, enabling it to appear on the first page of search engines and attract more potential buyers. Third, training and assistance are provided to farmers and administrators of the Kobaki Coffee Farmers' Association to enable them to update content, manage product catalogs, and utilize social media in an integrated manner. Fourth, on-page and off-page SEO strategies are implemented, including strengthening high-quality backlinks through collaborations with local news portals, coffee blogs, and relevant digital communities. Finally, regular monitoring and evaluation are conducted using Google Analytics and Google Search Console to assess website performance, and the evaluation results are used as a basis for refining more effective digital marketing strategies. Through these stages, the main problems of low product visibility, reliance on traditional marketing, and limited digital literacy are expected to be addressed Siregar [12], enabling Kobaki Coffee to expand its market, increase farmers' income, and serve as a model for digital technology-based village economic empowerment.

The Introduction should provide a clear background, a clear statement of the problem, the relevant literature on the subject, the proposed approach or solution, and the new value of research which it is innovation. It should be understandable to colleagues from a broad range of scientific disciplines. Organization and citation of the bibliography are made in IEEE style in sign [1, 2] and so on.

The main text format consists of flat left-right columns on A4 (quarto) paper. The margin text from the left is 3.0 cm, top, right and bottom is 2.5 cm.. The manuscript is written in Microsoft Word, single space, Times New Roman 10 pt and minimum 10 pages.

2. Research Method

The research was conducted in Jagaraksa Village, Muncang District, Lebak, from June to October 2025. The stages included initial surveys, observations, website development, SEO implementation, and digital evaluation. A survey was conducted with 12 members of the Kobaki Coffee Association using structured questionnaires, interview guides, and observations of production and marketing processes. Research tools included laptops, questionnaires, interview guides, and digital platforms such as WordPress, RankMath Pro, GA4, and GSC. Research materials consisted of primary data from farmers obtained through observations and interviews, as well as secondary data from literature. The survey and observation approach followed the user-context-based MSME method Fatah [13].

The research began with a survey, followed by the planning and needs analysis stage based on the survey findings. The information obtained was used to formulate the core features of the website, such as a product catalog, association profile, simple ordering system, and social media integration as a traffic generator. A user-centered design approach was applied to ensure that the website could be easily used by farmers, tailored to their characteristics Fatah [13]. In the architectural design stage, the website was structured with a clear navigation system. A responsive design was implemented to allow the website to be accessed through various devices, both desktop and mobile Hidayat [14]. Website speed optimization was achieved by selecting a lightweight theme and utilizing caching plugins, as recommended Odom, to improve user experience and support SEO. Website development was carried out using the WordPress platform, chosen for its open-source nature, ease of use, and comprehensive SEO plugin ecosystem Nugraha [15]. This process included installing WordPress on the kopikobaki.com domain, installing the RankMath Pro plugin for predictive SEO, configuring permalink and sitemap structures, creating static pages, and setting up a blog for publishing educational content. The use of RankMath is supported by findings from Ghazali [16], which state that this plugin provides more accurate optimization recommendations compared to conventional plugins.

The SEO implementation stage in this research was carried out comprehensively through the application of on-page and off-page optimization strategies to ensure that the developed website could achieve optimal visibility in search engine results. On-page SEO optimization focused on improving internal website elements that directly influence search engine indexing and user experience. This process included structuring meta titles and meta descriptions that accurately reflect page content and target keywords, optimizing headings (H1, H2, and H3) to create a clear content hierarchy, regulating keyword density to avoid over-optimization, and implementing internal linking to strengthen relationships between pages. These steps aim to help search engines better understand the relevance and context of the website content. This strategy aligns with research conducted by Elsa Utari [17], which demonstrates that the integration of on-page and off-page SEO techniques can significantly increase organic traffic and improve website ranking sustainability.

In parallel, off-page SEO was implemented to enhance the website’s authority and credibility. This stage involved efforts to build backlinks from relevant and trustworthy external sources, as well as increasing the website’s presence through digital references and community-based promotion. Off-page optimization plays a crucial role in signaling to search engines that the website is reliable and valuable to users. By

combining both approaches, the research ensures that the website does not rely solely on internal optimization but also gains external validation, which is essential for long-term SEO performance. After the website development and initial SEO implementation, technical testing was conducted to ensure that the system met performance and quality standards. This testing phase included evaluating page loading speed, display responsiveness across multiple devices, website security, and comprehensive SEO audits using tools such as RankMath and Google Search Console (GSC), as also discussed by Abdillah [18]. These tools were used to identify technical issues that could hinder indexing, such as broken links, slow page response times, or improper metadata configuration.

The initial evaluation phase focused on measuring key performance indicators, including click-through rate (CTR), the number of unique visitors, and keyword ranking positions in search engine results. These metrics provide an early indication of how effectively the SEO strategies influence user engagement and website visibility. Monitoring CTR helps assess the effectiveness of meta titles and descriptions in attracting users, while keyword rankings reflect the relevance of content to user search queries. Following this stage, continuous monitoring and maintenance were carried out using Google Analytics 4 (GA4) and Google Search Console. GA4 was utilized to analyze visitor behavior, traffic sources, session duration, and interaction patterns, enabling a deeper understanding of user engagement. Meanwhile, GSC was used to monitor keyword performance, detect indexing errors, and evaluate overall search visibility, as highlighted by Noeraida Tamtomo [19]..

3. Result and Discussion

3.1. The Result

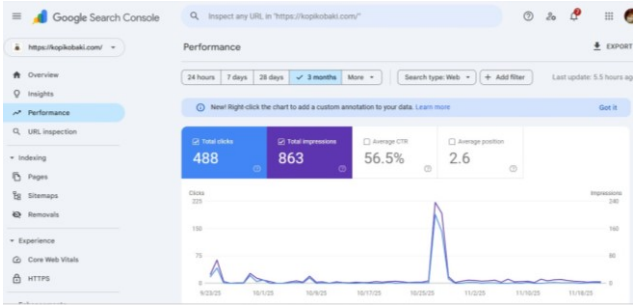

Figure 1 Google Search Console View of Kopi Kobaki Website

The results of this study, based on an analysis of the kopikobaki.com website using Google Search Console (GSC) data over the past three months, show that implementing a village economy model based on a website can increase the digital visibility of Kopi Kobaki MSMEs. The GSC data recorded a total of 488 clicks, indicating that visitors found and accessed the website through organic Google search results. This value is important as an indicator that the website is able to attract real visitors and provide direct benefits to the digital marketing efforts of farmers Lupitasari [20]. Additionally, there were 863 total impressions, meaning the website pages appeared 863 times in Google search results. This number shows that Google's algorithm has recognized the website's content as relevant to certain keywords, especially those related to local coffee, Muncang coffee production, and Kobaki Coffee Association. The increase in impressions reflects the success of the SEO strategy implemented, including setting meta titles, meta descriptions, and structuring headings according to RankMath recommendations Stefanus [21]

One of the most significant findings is the high average Click-Through Rate (CTR) of 56.5%. This value is exceptionally high compared to the average CTR of MSME websites, which typically ranges from 2-10%. A high CTR indicates that the information displayed in search results is highly relevant and appealing to users. Thus, the website pages not only appear but also encourage users to click and access further content. This demonstrates the success of on-page SEO optimization and relevant page title selection for those searching for information about Kobaki coffee. Furthermore, the average position of the website is 2.6, meaning the website content consistently appears at the top of the first page of Google. This high ranking is crucial because most Google users only access search results in positions 1-3. This data confirms that the search engine assesses the *Kopi Kobaki* website as having good relevance and content quality for targeted keywords. The GSC graph also shows a significant spike in clicks and impressions at the end of October. This surge can be interpreted as a positive response from search activity to specific content, such as product pages, blog articles, or community profiles. This phenomenon is normal for new websites and reflects potential viral moments, which then stabilize as Google's algorithm indexes and evaluates content routinely. Overall, the GSC results show that the Kopi Kobaki website has functioned effectively as a digital visibility medium for MSMEs and has successfully increased organic search access. These findings support the

argument that developing an SEO-based website can be a relevant strategy for increasing product competitiveness Dewanto [22]. Additionally, this positive performance demonstrates that farmers can benefit from digital technology through more measurable and data-driven marketing models.

3.1. Discussion

This study's results show that developing the *Kopi Kobaki* website has a direct impact on increasing the digital visibility of MSMEs and improving the connection between coffee farmers and potential consumers. The following discussion integrates findings from the initial survey, website development process, and digital performance evaluation results using Google Search Console (GSC).

During the survey and observation stage, it was found that most Kobaki Coffee farmers had little experience using digital media for marketing. Out of 12 respondents, 10 had never utilized digital platforms for sales and still relied on local collectors. Limited digital literacy, restricted marketing access, and the lack of a digital storefront were the main inhibiting factors. These findings emphasize the importance of technology-based interventions such as websites and SEO, as suggested by Fatah [13], who state that understanding users and the MSME context is the foundation of successful business digitalization.

A study by Ikhwan Arief [23] on GSC parameters such as clicks, impressions, click-through rate (CTR), and average position to assess their impact on universities' digital visibility was conducted. The results showed that impressions and average position play a significant role in determining Webometrics visibility scores, underscoring the importance of search engine optimization for educational institutions. Let's take a look at the development of CTR numbers over three months. After the *Kopi Kobaki* website was developed and optimized, digital performance evaluation was conducted through GSC. The GSC results for the last three months show significant achievements. The website recorded 488 total clicks and 863 total impressions, with a CTR (Click-Through Rate) of 56.5%, and an average position of 2.6 in Google search results.

Let's discuss the Google Search Console breakdown from left to right. The first is the total clicks, the development graph is as follows.

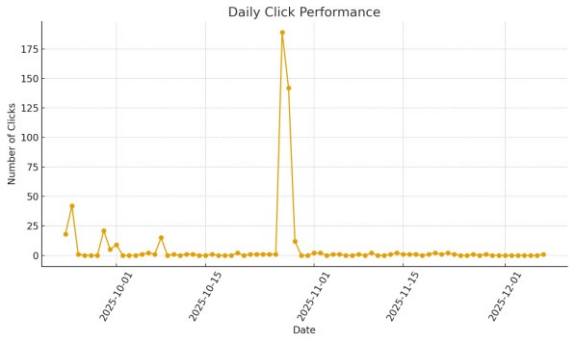

Figure 2. Daily Click Performance

On October 27th, the total clicks were very high, at 189, because at that time, young coffee farmers were being mentored to create and share content on TikTok and Instagram, Next, the total impressions.

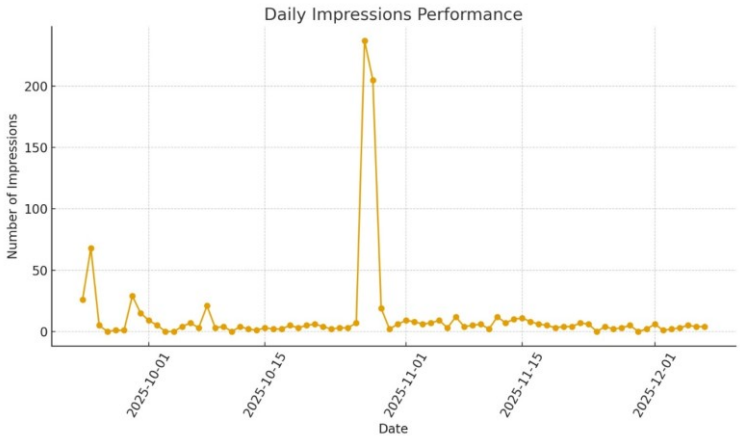

Figure 3. Daily Impression Performance

An impression occurs when your page appears on a user's screen in Google Search, regardless of whether the user scrolls or clicks on your page. If your URL appears in the SERP, even if it's far down and not clicked on, it still counts as an impression. The same event on October 27th the impression value was at its highest point Next CTR.

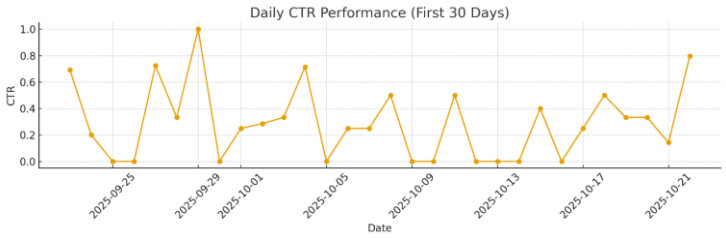

Figure 4. Daily CTR Performance

It is clearly visible how the CTR develops from day to day, which shows that this website has started to be read by Google and is organic, without advertising, only relying on SEO. CTR values fluctuate greatly. The very high CTR indicates that users who saw the website in search results tended to click on it. This suggests that on-page optimization, such as meta titles, meta descriptions, and keyword usage, has been effective Ghazali Isnain [16]. Although there are fluctuations in impressions and clicks, the sharp increase on certain days indicates the success of blog content publication and link-sharing activities through social media, which can drive traffic surges. The last is the average position :

Figure 5. Daily Position Performance

The average position of 2.6 shows that the *Kopi Kobaki* website is on the first page of Google for most targeted keywords. This achievement demonstrates that the combination of on-page and off-page SEO works optimally, in line with findings by Elsa Utari that integrated SEO strategies can significantly increase MSME organic traffic.

Overall, the GSC results prove that the website functions as a relevant digital storefront and is able to attract organic users without advertising costs. From a business perspective, achieving 488 clicks in three months can be interpreted as 488 potential transactions or at least consumer awareness of Kobaki Coffee products.

Compared to previous research on MSME digitalization, the novelty of this study lies in the application of Predictive SEO based on RankMath Pro, integration with Google Analytics 4, and the implementation of user-centered design tailored to the characteristics of rural coffee farmers. Previous research has focused on MSME websites in general, but has not integrated predictive SEO approaches with low digital literacy contexts like this case. Thus, this study not only produces a digital platform but also proves that technological interventions can drive village economic independence through increased visibility of local products. The research results show that developing the *Kopi Kobaki* website has a direct impact on increasing the digital visibility of rural coffee MSMEs and strengthening their ability to utilize technology for marketing. The GSC findings, which show 488 clicks, 863 impressions, a 56.5% CTR, and an average position of 2.6, indicate that the website is able to consistently appear in Google search results and attract user attention. This is in line with Elsa Utari [17] opinion that effective SEO optimization can significantly increase organic traffic without advertising costs. The website's appearance in excellent search positions (2.6) shows that on-page SEO strategies, such as keyword arrangement, heading structure, and meta descriptions, as well as the support of the RankMath predictive SEO plugin, work effectively. This is in line with Ghazali Isnain [16] findings that RankMath is able to provide more accurate optimization recommendations

compared to other SEO plugins, thereby increasing the chances of appearing in strategic positions on search pages. From the user's perspective, initial survey data shows that 10 out of 12 farmers had never used digital media for marketing before the website intervention.

These findings strengthen the argument Alviani [24] that MSME digitalization requires not only technical tools but also *a user-centered* design approach that understands the limitations of business actors' digital literacy. By utilizing this approach, the development of the *Kopi Kobaki* website was able to present a simple interface, relevant features, and easy-to-understand navigation, so that users with low digital literacy can still adapt. Another benefit that can be drawn is the increase in *brand awareness* for Kobaki Coffee products. The surge in clicks in certain periods on the GSC graph indicates moments when website content or links shared via social media attract public attention. This shows that the integration of the website with social media channels functions as *a traffic generator*, supporting the statement Lailla [4] that synergy between websites and social media can effectively expand the marketing reach of MSMEs. More broadly, this research proves that website-based digitalization is able to overcome the limitations of traditional marketing that previously relied only on local collectors. The website functions as a digital storefront that can be accessed 24 hours a day, reaching consumers across regions, and increasing transaction opportunities. These findings strengthen the model proposed by Andari [25] regarding the role of websites as *a core digital touchpoint* that increases the competitive value of MSMEs in the digital economy era.

The discussion of the research results shows a significant difference between the findings of this study and previous research on MSME digitalization and website-based system development. In terms of users, previous research was generally conducted on MSME actors who already had basic experience in using social media and digital marketing platforms. This study, on the other hand, was conducted on a group of coffee farmers with very low digital literacy, where most respondents had never used digital media for marketing. This condition presents a different context and shows that technology implementation can be successful even when applied to a group of users who are not familiar with digital tools. This contextual difference creates a significant research gap and presents a new contribution to the application of *user-centered design* approaches for rural communities.

From a technological perspective, previous research has largely applied basic and manual SEO techniques. Meanwhile, this study integrates predictive SEO through the use of RankMath Pro, which, according to Ghazali Isnain [16], has more accurate analytical capabilities in providing optimization recommendations. This technological integration results in high website performance, as reflected in the achievement of an average search position of 2.6 and a CTR of 56.5% within three months. This finding indicates an update in the MSME website optimization model that combines predictive approaches and data-driven SEO audits. Another difference is seen in the evaluation method. Most previous research assessed website performance based on user perception or subjective indicators. In this study, the evaluation was conducted using objective data from Google Search Console, including clicks, impressions, CTR, and keyword positions. This approach is in line with Wijaya recommendation on the importance of using measurable digital metrics to assess the effectiveness of web-based marketing strategies. The use of empirical data as the basis for evaluation strengthens the validity of the results and is a clear differentiator from previous research.

The regional and commodity context studied also reveals a gap with other studies. Research on MSME digitalization usually focuses on urban sectors, while this study focuses on coffee commodities in rural areas with limited technology and infrastructure access. This condition provides a new perspective on the implementation of digitalization in rural communities that face different challenges from urban MSMEs. The integration of the website with the farmer organization structure and rural marketing ecosystem further strengthens the novelty of the research. The website not only functions as a medium for information and product showcase but also as a component of a technology-based village economic model. This approach expands the function of the website beyond the common practice of previous research that tends to view websites as individual marketing tools.

4. Conclusion

This study shows that the development of the *Kopi Kobaki* website based on predictive SEO can increase the digital visibility of village coffee MSMEs, even when implemented in a community with low digital literacy. The integration of *a user-centered design* approach, RankMath Pro optimization techniques, and evaluation based on Google Search Console metrics resulted in strong digital performance with high CTR and competitive search positions. These findings prove that website-based digitalization can be an effective model for strengthening marketing, increasing farmers' digital literacy, and supporting village economic independence through sustainable technology utilization.

Acknowledgement

There is a decrease in the CTR value because young people who are operators and content creators are not yet able to create content on the website regularly, they still need assistance so that the visibility of Kobaki coffee remains visible and continues to increase.

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