

Social Marketing Strategy of Frozen Semen Produced by Singosari Artificial Insemination Center

Rizki Prafitri*, Kuswati, Puji Akhiroh, Dina Marlina, Khaerunnisa Firdaus Sadikin, Lensa Auliati

Faculty of Animal Science, Universitas Brawijaya, Malang, Indonesia

*Corresponding author email: rizkiprafitri@ub.ac.id

Abstract. The research conducted at the Singosari Artificial Insemination Center aims to analyze internal and external environmental factors affecting frozen semen marketing and formulate effective marketing strategies. Using a quantitative explanatory approach, data were collected through observations, interviews, and documentation. Internal factors were evaluated using the Internal Factor Evaluation (IFE) matrix, external factors were assessed through the External Factor Evaluation (EFE) matrix, and the Internal-External (IE) matrix was utilized to determine the company's position, providing a more comprehensive overview of the analysis. Results show that strengths (score: 1.77) and opportunities (score: 1.69) outweigh weaknesses (score: 1.52) and threats (score: 1.4). BBIB Singosari's key strengths include ISO- and SNI-certified frozen semen, genetic diversity, and competitive pricing. Meanwhile, threats such as reproductive diseases and market competition must be addressed. The marketing strategy, based on the SWOT matrix, emphasizes consistent product quality improvement, utilization of market intelligence, and fostering consumer relationships. A significant component of this strategy is social marketing, which raises awareness about artificial insemination and the benefits of high-quality frozen semen. Social marketing involves targeted education through social media, direct farmer outreach, and community campaigns, ensuring higher adoption rates of artificial insemination technology. These strategies strengthen BBIB Singosari's market position while contributing to sustainable livestock population growth in Indonesia. The investigation emphasizes the necessity of innovative marketing approaches to overcome internal and external challenges and enhance BBIB's role as a leader in livestock development.

Keywords: internal and external factors, marketing strategy, semen, social marketing, swot

Abstrak. Penelitian di Balai Besar Inseminasi Buatan (BBIB) Singosari bertujuan untuk menganalisis faktor-faktor lingkungan internal dan eksternal yang memengaruhi pemasaran semen beku serta merumuskan strategi pemasaran yang efektif. Dengan menggunakan pendekatan kuantitatif eksplanatori, data dikumpulkan melalui observasi, wawancara, dan dokumentasi. Faktor internal dievaluasi menggunakan matriks Internal Factor Evaluation (IFE), faktor eksternal dievaluasi menggunakan matriks External Factor Evaluation (EFE), dan matriks Internal-Eksternal (IE) juga dimanfaatkan untuk menentukan posisi perusahaan, sehingga memberikan gambaran analisis yang lebih komprehensif. Hasil penelitian menunjukkan bahwa kekuatan (skor: 1,77) dan peluang (skor: 1,69) lebih besar dibandingkan kelemahan (skor: 1,52) dan ancaman (skor: 1,4). Kekuatan utama BBIB Singosari meliputi kualitas semen beku bersertifikasi ISO dan SNI, keberagaman genetik, serta harga yang kompetitif. Sementara itu, ancaman seperti penyakit reproduksi dan persaingan pasar perlu diantisipasi. Strategi pemasaran yang didasarkan pada matriks SWOT menitikberatkan pada peningkatan kualitas produk secara konsisten, pemanfaatan intelijen pasar, dan penguatan hubungan dengan konsumen. Komponen penting dalam strategi ini adalah pemasaran sosial, yang bertujuan meningkatkan kesadaran tentang inseminasi buatan dan manfaat semen beku berkualitas tinggi. Pemasaran sosial mencakup edukasi terarah melalui media sosial, penyuluhan langsung kepada peternak, dan kampanye berbasis komunitas, sehingga dapat mendorong tingginya tingkat adopsi teknologi inseminasi buatan. Strategi-strategi tersebut memperkuat posisi pasar BBIB Singosari sekaligus berkontribusi pada pertumbuhan populasi ternak yang berkelanjutan di Indonesia. Studi ini menegaskan pentingnya pendekatan pemasaran inovatif untuk mengatasi tantangan internal dan eksternal serta meningkatkan peran BBIB sebagai pemimpin dalam pengembangan peternakan.

Kata kunci: faktor internal dan eksternal, pemasaran sosial, semen, strategi pemasaran, swot

Introduction

The Singosari Artificial Insemination Center (BBIB Singosari) serves as a public service agency that plays a crucial role in advancing Indonesia's livestock sector. It is tasked with producing and

distributing high-quality cattle semen while also supporting government initiatives aimed at boosting livestock populations and productivity, particularly in beef and dairy cattle. BBIB Singosari primarily offers high-quality frozen semen, livestock feed seeds, animal feed, and

fertilizers. Additionally, it provides various services such as technical guidance, livestock tours, semen quality testing, consultations, and competency assessments. These products and services demonstrate BBIB Singosari's dedication to significantly enhancing the national livestock industry.

As a public service agency, BBIB Singosari encounters several challenges, particularly regarding competitive pricing, widespread distribution, and managing customer perceptions. For instance, while government subsidies help keep frozen semen affordable for small-scale farmers, the organization must balance production costs with seasonal demand to prevent price fluctuations. In terms of distribution, BBIB Singosari partners with local cooperatives to deliver over 15,000 frozen semen straws each year to remote areas, though logistical issues can still impact product availability. Customer perceptions are addressed through ongoing education programs and direct feedback channels, which have contributed to a 15% increase in farmer satisfaction over the past two years. These circumstances necessitate that BBIB Singosari adopt marketing strategies that are both flexible and informed by practical experience, ensuring they can respond effectively to market changes.

Lu (2018) notes that innovative marketing strategies can greatly improve awareness among markets and consumers. Sawhney et al. (2006) emphasize the importance of marketing innovation in helping businesses respond to rapid market changes, particularly in the technology sector. Yadav et al. (2018) point out that innovative marketing strategies are essential for achieving a competitive edge. Pauwels et al. (2016) argue that successful companies continually innovate their marketing approaches to capture market share and maintain competitiveness. For BBIB Singosari, adopting adaptable and innovative marketing strategies is vital for addressing both internal and external challenges. This aligns with the idea

that adjusting to industry and technological changes, while leveraging technology as a key enabler, can enhance competitiveness (Pauwels et al., 2016; Lu, 2018). At BBIB Singosari, this adaptability is evident in targeted promotions for various regions, pilot projects that explore new genetic lines, and dynamic pricing strategies that adjust to fluctuating input costs.

Marketing frozen semen products is the central focus of BBIB Singosari's efforts to increase the livestock population in Indonesia. Here, factors such as genetic quality, production costs, product pricing, and distribution are all essential elements that shape marketing strategies. Beyond adaptiveness, BBIB Singosari employs social marketing to educate breeders about artificial insemination, addressing commercial and social objectives. Social marketing, which focuses on changing public behavior for societal benefit, can effectively broaden market reach while educating livestock communities. Beaman et al. (2018) demonstrate that leveraging social networks through targeted interventions can significantly enhance farmers' adoption of new agricultural technologies. Information dissemination becomes more effective by identifying and training key individuals within a community, increasing the technology adoption rate. Domegan et al. (2021) similarly discuss integrating social marketing strategies into sustainable development initiatives, emphasizing the importance of understanding social systems and community behavior for designing effective interventions. In a recent initiative, BBIB Singosari worked with farmer groups in East Java to promote disease prevention workshops, helping reduce insemination failure rates by 10%.

This study analyzes the internal and external factors affecting BBIB Singosari's frozen semen marketing. Using SWOT analysis (Gürel & Tat, 2017), the research will identify the strengths, weaknesses, opportunities, and threats faced by BBIB Singosari, concentrating on the marketing aspect rather than every operational facet of the

institution. We will use the findings to develop marketing strategies that encompass product, pricing, distribution, and social marketing elements (Kotler & Lee, 2008; Lefebvre, 2013). These strategies are expected to bolster the effectiveness of frozen semen marketing, strengthen BBIB Singosari's market position, and support long-term objectives for sustainably increasing the national livestock population.

Materials and Methods

This study took a quantitative approach through explanatory research. Sugiyono (2017) notes that explanatory research aims to elucidate the roles and interconnections of the variables under investigation. Data for the Internal Factor Evaluation (IFE), External Factor Evaluation (EFE), and SWOT analyses were collected using structured questionnaires and in-depth interviews with 30 respondents—20 internal stakeholders (from production, marketing, and finance) and 10 external stakeholders (farmers and government representatives). All respondents played a crucial role in identifying and evaluating the internal and external factors used in the SWOT analysis.

The IFE Matrix was used to categorize internal factors as strengths or weaknesses for BBIB Singosari, followed by the assignment of weights to each factor. Identifying internal factors involved discussions with department heads to assess resource availability, operational efficiency, and product innovation. External factors were analyzed through industry reports, competitor performance, and feedback from farmer communities. The weighting process was conducted by a panel of five experts (two from BBIB Singosari's management and three external marketing consultants), all of whom were part of the overall respondent group. Each expert assigned weights to the identified factors on a scale from 0 to 1, ensuring that the total of all factor weights in the IFE or EFE equaled 1. Then, each factor was rated on a scale from 1 (lowest)

to 4 (highest), reflecting its perceived impact on BBIB Singosari's marketing performance. The final scores for IFE and EFE were calculated by multiplying each factor's weight by its rating, providing a quantitative measurement of each factor's relative importance. Following this, the Internal-External (IE) Matrix was utilized to position the company based on its internal and external factors, laying the groundwork for more detailed strategic planning.

The SWOT analysis (Gürel & Tat, 2017) systematically identifies strengths, weaknesses, opportunities, and threats to develop business strategies. Its primary goal is to leverage internal strengths and external opportunities while mitigating internal weaknesses and external threats. Decision-making in this context involves defining the company's mission, objectives, strategies, and policies. The SWOT matrix generates four potential strategies.

1. SO (Strengths-Opportunities) Strategy: Leveraging internal strengths to capitalize on external opportunities.
2. ST (Strengths-Threats) Strategy: Utilizing internal strengths to counter external threats.
3. WO (Weaknesses-Opportunities) Strategy: Addressing internal weaknesses by leveraging external opportunities.
4. WT (Weaknesses-Threats) Strategy: Minimizing both internal weaknesses and external threats.

Additionally, this research utilizes social marketing (Kotler & Lee, 2008; Lefebvre, 2013) to analyze and develop effective marketing strategies. Social marketing focuses on influencing public behavior for social good while also meeting commercial goals. In the case of BBIB Singosari, this method prioritizes educating farmers about the significance of artificial insemination and the benefits of using high-quality frozen semen.

The social marketing approach involves identifying the needs and motivations of the target audience, crafting compelling and

relevant messages, and utilizing effective communication channels such as social media, direct outreach, and community-based campaigns. By incorporating social values and educational elements into its marketing strategies, BBIB Singosari can expand its market presence and strengthen its connections with the farming community.

By integrating SWOT analysis (Gürel & Tat, 2017) with social marketing (Kotler & Lee, 2008), this research aims to develop marketing strategies for frozen semen that are both commercially viable and socially beneficial. This approach is expected to contribute to the growth of the national livestock population and enhance BBIB Singosari's role as a model public service agency.

Results and Discussion

BBIB Singosari is a public service agency dedicated to monitoring cattle semen quality and promoting artificial insemination as a community service. It is located on Jalan BBIB in Ngujung, Toyomarto, Singosari District, Malang Regency, East Java. BBIB Singosari operates under Regulation Number 43 of the Minister of Agriculture of 2020, which outlines the organizational and operational procedures for the Technical Implementation Unit under the Directorate General of Animal Husbandry and Health. Furthermore, it was designated as a Public Service Agency (PK-BLU) by the Decree of the Minister of Finance No. 54/KMK.05/2010, dated February 5, 2010. With over 28 years of operation, BBIB Singosari produces frozen semen from various cattle breeds—including Limousin, Simmental, Aberdeen Angus, Brangus, Brahman, Ongole, Madura, Bali, Holstein Friesian, and Wagyu—as well as from goat breeds like Ettawa, Boer, Saanen, and Senduro Peranakan.

In examining the marketing and production strategy for frozen semen, this study employs both quantitative and qualitative analyses, consistent with prior applications of SWOT to

understand the interaction of internal and external factors. The systematic approach of quantitative research is crucial for analyzing data reliably, as noted by Darwin et al. (2021), emphasizing the importance of selecting a suitable research design to yield trustworthy results.

In strategic management, David (2006) highlights that thoroughly identifying internal and external factors is essential for effective strategy formulation. This principle is particularly relevant as BBIB Singosari assesses its strengths (such as ISO- and SNI-certified frozen semen) and weaknesses (like the limited availability of superior studs), along with opportunities (government and industry partnerships) and threats (reproductive diseases in livestock).

From a marketing perspective, understanding farmers' specific needs and maintaining competitive pricing aligns with the findings of Nurdianto & Baehaki (2020), which indicate that targeted marketing strategies in community-based farming can enhance consumer satisfaction and broaden market reach.

Endarwita (2021) demonstrates how the SWOT framework can be applied in the tourism sector, emphasizing that one has to integrate findings from internal and external analyses to maximize potential development. While the context may differ, BBIB Singosari can utilize this same strategic approach to capitalize on its strengths and anticipate challenges.

Moreover, insights from Qanita (2020) through the Quantitative Strategic Planning Matrix (QSPM) stress the importance of an objective process for weighting and rating when assessing strategic options. Although this study primarily utilizes the IFE, EFE, and IE matrices, the fundamental concept of systematic evaluation aligns well with the QSPM method.

Social Marketing

According to Kotler and Lee (2008), social marketing is a process that applies marketing

principles and techniques to create, communicate, and deliver value aimed at influencing target audiences' behaviors for the benefit of society. Since Kotler and Zaltman introduced the concept in 1971, social marketing has developed into a vital discipline for promoting social change. Lefebvre (2013) pointed out that social marketing focuses not only on individual behavior change but also on broader social transformations, including shifts in social networks, norms, businesses, markets, and public policies.

Despite being around for decades, social marketing remains innovative in the context of BBIB Singosari, as it combines traditional educational programs with modern digital tools like Facebook and WhatsApp, along with on-site campaigns for more effective and targeted outreach. By integrating behavioral change strategies with new communication technologies, BBIB Singosari can more effectively influence both individual farmers and larger community networks. The organization uses social marketing to educate farmers about the significance of artificial insemination, the advantages of high-quality frozen semen, and its role in enhancing livestock productivity and genetic quality. These initiatives not only aim to educate but also align with BBIB Singosari's broader business goals—such as increasing market share, enhancing brand credibility, and supporting revenue growth.

The innovative aspect of social marketing here lies in its blend of traditional educational efforts with digital platforms and community-based programs, allowing BBIB Singosari to reach wider audiences more efficiently. The social marketing strategy employed in this research is based on the idea that societal behavior change can occur if the messages are relevant and appropriate. With a well-crafted strategy, BBIB Singosari can connect with farmers across various regions, even in remote areas, to enhance their understanding of artificial insemination technology.

To support this alignment, BBIB Singosari plans to use multiple communication channels, including Facebook, WhatsApp groups, and local media such as community radio and bulletins. Messaging will focus on (1) success stories from local farmers who have successfully adopted BBIB's frozen semen, showcasing tangible results like higher conception rates or improved offspring quality; (2) straightforward guides outlining best practices for insemination; and (3) visual content that emphasizes the benefits of ISO- and SNI-certified frozen semen. By presenting relatable, evidence-based messages, farmers will be better positioned to appreciate the commercial and genetic advantages, ultimately aiding BBIB Singosari's market expansion efforts.

This social marketing approach involves three main elements:

1. Identifying the Needs and Motivations of the Target Audience

BBIB Singosari recognizes the specific needs and motivations of farmers when it comes to improving livestock productivity. By using a data-driven approach, BBIB can create advertisements that resonate with local farmers, taking into account factors like access to technology, costs, and the direct benefits of using frozen semen.

2. Designing Relevant and Persuasive Messages

Messages are crafted to emphasize the advantages of artificial insemination in boosting livestock yield, both in quality and quantity. These messages are designed to be clear and relatable, aligning with the cultural and social backgrounds of the target community. Success will be measured by monitoring participation in training sessions, engagement levels on digital platforms (likes, shares, and comments), and increased demand for BBIB's frozen semen products.

3. Utilizing Effective Communication Channels

Social marketing employs various communication channels, including social

media, direct extension programs, and on-site training. While social media allows for broad outreach, community campaigns and direct engagement help BBIB establish closer relationships with farmers. Additionally, periodic surveys will be conducted to gauge changes in farmer perceptions, ensuring that social marketing efforts align with broader business objectives such as market expansion, revenue growth, and brand strengthening.

The application of social marketing offers numerous benefits for BBIB Singosari. several benefits for BBIB Singosari. First, this approach raises farmers' awareness of the importance of artificial insemination, encouraging wider adoption of the technology. Second, the interactions fostered through social marketing programs help build trust between BBIB and the farming community. Third, social marketing enables BBIB to effectively expand its market share while reinforcing its commitment to sustainable livestock development.

In practical terms, BBIB Singosari aims to utilize accessible digital platforms like Facebook, WhatsApp groups, and local agricultural forums to connect with farmers. Messaging will focus on clear, relatable content that highlights cost savings, increased productivity, and the long-term genetic benefits of artificial insemination. Success will be measured by tracking key performance indicators (KPIs), including social media engagement rates, the growth in the number of farmers reached through messaging services, repeat orders for frozen semen, and higher adoption rates of artificial insemination in target regions. These social marketing efforts align with BBIB Singosari's broader goals of market expansion and enhancing brand credibility, supporting both commercial targets and public service missions.

Research by Beaman et al. (2018) shows that network-based interventions, such as training

key community members, can significantly improve the spread of information and speed up the adoption of new technologies like artificial insemination. Additionally, research by Domegan et al. (2021) underscores the importance of understanding social systems and the community behavior in creating effective interventions that promote sustainable change. For BBIB Singosari, grasping the social dynamics of farmers is essential for enhancing the effectiveness of its social marketing initiatives.

To illustrate current adoption levels and market potential, preliminary data indicate that artificial insemination adoption rates in targeted regions of East Java range from about 55% to 60%, suggesting significant room for growth. BBIB Singosari's market share of frozen semen among smallholder farmers in this area is estimated to be around 40%. Consumer feedback shows strong interest in genetic improvement and competitive pricing. Social marketing plays a key role in integrating social values and education into BBIB's marketing strategies. By adding value through education, BBIB not only broadens its market reach but also strengthens relationships with farmers. Programs like artificial insemination training, direct consultations, and extension activities on superior livestock genetics can create long-term positive impacts for both farmers and the sustainability of BBIB Singosari.

By measuring conversions from social media campaigns, tracking training participants, and correlating these metrics with frozen semen sales data, BBIB Singosari can ensure that its social marketing efforts effectively contribute to its broader business objectives. This approach aligns with BBIB's vision of supporting the sustainability of Indonesia's livestock sector through an inclusive and community-focused strategy.



Figure 1. Social marketing procces

Source:<https://static.republika.co.id/uploads/memb er/images/news/qnln8ycwz4.jpg>

The image above illustrates the key stages in implementing social marketing, including Co-Creating (collaborating to create value), Building (developing strategies and relationships), and Engaging (involving the audience). This cyclical process shows that social marketing is iterative, continuously adjusting strategies based on audience responses and needs. In marketing its frozen semen products, BBIB Singosari adopts a social marketing approach, which raises public awareness about the importance of artificial insemination and the advantages of high-quality frozen semen. The steps include: Co-create: Collaborating with farmers, genetic experts, and the government to identify market needs and create relevant solutions.

1. Co-create: Collaborate with farmers, genetic experts, and the government to identify market needs and develop relevant solutions.
2. Build: Create compelling marketing

3. messages and establish a strong distribution network, leveraging digital technology.
4. Engage: Involve the audience through social media, direct training, and community-based campaigns to promote the adoption of artificial insemination technology.

The SWOT analysis assesses a company's position from both internal and external perspectives. It systematically identifies various factors to formulate effective strategies by maximizing strengths and opportunities while minimizing weaknesses and threats. In this study, the SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) was employed to evaluate the marketing strategy of frozen semen produced by the Singosari Artificial Insemination Center, focusing on both BBIB Singosari and its customers.

The IE matrix (Internal-External) assesses a company's position based on calculated weights, ratings, and scores analyzed from multiple angles, including strengths, weaknesses, opportunities, and threats. This method relies on a weighted sum of total internal and external values (Dwiastuti, 2008).

Based on the questionnaire data gathered from interviews with the marketing team and the Head of BBIB Singosari, we conducted a score calculation to assess the marketing of frozen semen produced by BBIB Singosari. This evaluation considered both internal factors (strengths and weaknesses) and external factors (opportunities and threats).

Table 1. Strength Score Calculation

Strength	Weight	Ratings	score
ISO-certified Frozen Semen quality _	0.09	4	0.36
Selection tight stud _ avoid inbreeding	0.08	4	0.32
Developed genetic variation	0.07	3	0.21
Semen sexing	0.05	4	0.20
Competitive price	0.05	4	0.20
Availability technology	0.06	3	0.18
Availability of HR	0.05	3	0.15
Service and loyalty to customer	0.05	3	0.15
Sub-Total	0.53		1.77

Source: Primary data processed, 2022.

Table 2. Calculation of Weakness Score

Weakness	Weight	Ratings	score
Limitations budget	0.08	4	0.32
Difficult to get a superior stud	0.07	4	0.28
Fluctuation price product	0.08	3	0.24
Amount semen availability	0.07	2	0.14
Production process	0.07	2	0.14
Market demand	0.06	2	0.12
Support funding from the government	0.07	4	0.28
Sub-Total	0.47		1.52
Total			3.29

Source: Primary data processed, 2022.

This indicates that BBIB Singosari has several strengths that can be effectively leveraged, and the opportunities available surpass the threats. Therefore, BBIB Singosari is well-positioned to take advantage of potential opportunities while minimizing risks.

In terms of internal factors, the strength score was 1.77 and the weakness score was 1.52. A key strength in BBIB Singosari's frozen semen marketing is the ISO and SNI certifications, supported by regular quality testing that enhances its reliability.

Additionally, the organization implements stringent genetic selection and thorough record-keeping for its breeding stock, which helps

prevent inbreeding through artificial insemination. Other strengths include a high demand for sexed semen among breeders and competitive pricing compared to other frozen semen products

However, a notable weakness in marketing frozen semen at BBIB Singosari is the lack of government funding for developing superior breeding stock. Additionally, the stringent genetic selection and record-keeping limit the number of elite studs that can be maintained for frozen semen production. Factors such as price fluctuations, semen availability, product demand, and manufacturing processes have a minimal impact on the overall marketing score.

Table 3. Odds Score Calculation

Opportunity	Weight	Ratings	score
BLU status	0.08	3	0.24
Contract special with Government/industry	0.09	4	0.36
Frozen semen request	0.08	4	0.32
The role of cooperatives/groups	0.09	4	0.36
Frozen semen prices	0.09	3	0.27
Socialization of frozen semen products	0.07	2	0.14
Sub-Total	0.50		1.69

Source: Primary data processed, 2022.

Table 4. Threat Score Calculation

Threat	Weight	Ratings	score
Competition with other institutions	0.07	2	0.14
Inseminator skills	0.08	2	0.16
Breeder skills	0.08	2	0.16
Technology facilities	0.07	2	0.14
Information on FMD-free	0.1	4	0.40
Cattle reproductive disease	0.1	4	0.4
Sub-Total	0.50		1,4
Total			3.09

Source: Primary data processed, 2022.

Table 5. Internal-External Matrix

The total EFE value is weighted	Total weighted IFE Value			
		Strong (3.0-4.0)	Average (2.0-2.99)	Weak (1.0-1.99)
	High 3.0-4.0	I	II	III
	Moderate 2.0-2.99	IV	V	VI
	Low 2.0-1.99	VII	VIII	IX

Regarding external factors, opportunities scored 1.69, while threats scored 1.40. BBIB Singosari's status as a BLU (General Service Agency) significantly contributes to its marketing potential for frozen semen. This status allows the organization to set product prices based on production costs. Moreover, BBIB Singosari has benefited from contract sales with the East Java government and industries like Nestle, which utilize its frozen semen. Conversely, common reproductive diseases in livestock that lead to artificial insemination failures pose a threat to the marketing of frozen semen. Additionally, the ongoing FMD outbreak in East Java requires extra documentation to ensure products are free from FMD, which could slow down distribution.

On the other hand, normal reproductive diseases in livestock can lead to failures in artificial insemination (AI), which poses a significant risk to the marketing of frozen semen and the production at BBIB Singosari. Additionally, the ongoing outbreak of foot-and-mouth disease (FMD), particularly in East Java, has limited BBIB Singosari's marketing efforts. To sell products outside East Java, they must provide documentation confirming that the products are FMD-free. This requirement complicates the marketing of frozen semen and hampers production at BBIB Singosari. Other challenges include competition from other insemination institutions and the varying skills of breeders or deep inseminators in detecting estrus, which further threaten frozen semen marketing and production at BBIB Singosari.

Internal External (IE) Matrix

According to Putri et al. (2014), the Internal-External (IE) Matrix not only helps in identifying a company or business unit's position but also

provides more detailed guidance for formulating strategic decisions at the divisional level. From the Internal-External (IE) Matrix analysis, it can be seen that the position of frozen semen marketing and production at BBIB Singosari is in Cell 1. This condition means that the organization should adopt Grow and Build strategies, which include intensive (market penetration, market development, product development) or integrative approaches (integration in the front or back), as described in Table 5. It follows Putra et al. (2019), who state that Cells I, II, and IV are associated with conditions favoring company growth and expansion. The best application strategy is either intensive which includes market penetration, market development, and product development or integration which includes forward integration, backward integration, and horizontal integration.

The final step in developing a marketing strategy for frozen semen at BBIB Singosari is the SWOT matrix, which highlights four key areas: strengths, weaknesses, opportunities, and threats. From this analysis, four marketing strategies emerge: SO, ST, WO, and WT. BBIB Singosari has chosen to focus on the SO strategy because its strengths—such as ISO- and SNI-certified products, high genetic diversity, and competitive pricing—perfectly align with current market opportunities, including strong government partnerships and increasing demand for quality cattle genetics. This strategic alignment enables BBIB Singosari to leverage its internal strengths while taking advantage of favorable market trends, ultimately enhancing adoption rates and boosting brand credibility in a relatively short time.

SWOT Matrix

Table 6. SWOT Matrix

	Internal Factor	Strength (<i>Strengths</i>)	Weakness (<i>Weaknesses</i>)
		<ol style="list-style-type: none"> 1. ISO and SNI-certified frozen semen quality 2. Selection of tight stud _ 3. Developed genetic variation 4. Semen sexing 5. Price 6. Availability technology 7. Availability of HR 8. Service and loyalty to customer 	<ol style="list-style-type: none"> 1. Limitations budget 2. It is not easy to get a superior stud 3. Fluctuation of product price 4. Amount of semen availability 5. Production process 6. Market demand 7. Support funding from the government
	External Factor	Opportunity (<i>Opportunities</i>)	SO strategy
		<ol style="list-style-type: none"> 1. BLU status 2. Contract special with government/industry 3. Frozen semen request 4. The role of cooperatives/groups 5. Frozen semen prices 6. Frozen semen outreach 	<ol style="list-style-type: none"> 1. Do a quality test consistently to maintain the quality of frozen semen 2. Increase male genetic variation superior 3. Utilise access to high-market information 4. Build and maintain good connections with the consumer 5. Utilise development as well as science and technology progress to produce high-quality frozen semen
		Threat (<i>Threats</i>)	WT Strategy
		<ol style="list-style-type: none"> 1. Competition with other institutions 2. Inseminator skills 3. Breeder Skill 4. Technology Facilities 5. Information on FMD-free 6. Disease reproduction cattle 	<ol style="list-style-type: none"> 1. Do diversification business 2. Increase activity promotion Good in a manner conventional as well as digital 3. Increase communication to government / industry / inseminator / breeder 4. Develop distribution area 5. Anticipate reproduction disease 6. Increase productivity

From the SWOT matrix, four alternative marketing strategies emerge: SO, ST, WO, and WT. Of these four strategies, BBIB Singosari ultimately prioritizes the SO (Strengths-Opportunities) Strategy because the organization's strengths (ISO- and SNI-certified products, high genetic diversity, and competitive pricing) align well with existing market opportunities (strong government partnerships and rising demand for quality cattle genetics). Additional information shows that the adoption rate of artificial insemination in target areas is approximately 60%, with BBIB Singosari holding

an estimated 40% market share among smallholder farmers in East Java. Internal surveys reveal that about 70% of farmers express significant interest in genetic improvement when the benefits are effectively communicated, indicating a strong potential for market expansion.

By concentrating on continuous product quality enhancement, fostering deeper customer relationships, and executing innovative social marketing campaigns, BBIB Singosari can effectively utilize its strengths while meeting the growing demand for

sustainable livestock solutions. This strategy aligns with the idea that organizations should adopt a growth-oriented mindset when both internal and external conditions are favorable.

In summary, BBIB Singosari prioritizes the SO strategy for two main reasons. First, the organization boasts strong internal advantages—like ISO- and SNI-certified products, a solid reputation, and competitive pricing—that align with supportive market conditions, such as government backing and increasing interest in genetic improvement. Second, leveraging these strengths to meet the rising interest in artificial insemination allows BBIB to effectively reach underserved communities. This approach is more strategic than the other alternatives, as it directly addresses the organization's ability to scale quickly while fulfilling a clear market need for high-quality frozen semen.

Consequently, the SO strategy is recommended to increase BBIB Singosari's adoption rates, currently around 60% in target areas, and enhance its market share, which is estimated at 40%. By focusing on quality improvement, building stronger customer relationships, and implementing innovative marketing campaigns, BBIB Singosari can capitalize on its strengths and meet the growing demand for sustainable livestock solutions.

Conclusions

Based on the analysis of the results, internal factors reveal that BBIB Singosari has strengths scoring 1.77, while weaknesses score 1.52. External factors show opportunities with a score of 1.69 and threats at 1.4. Overall, the internal factor score is 3.29, and the external factor score is 3.09, indicating that BBIB Singosari has more strengths than weaknesses. Key strengths include high-quality ISO and SNI-certified frozen semen, advancements in genetic diversity, and competitive pricing. Its designation as a Public Service Agency (BLU) opens doors for marketing through special contracts with government and

industry partners. However, challenges such as livestock reproductive diseases and competition from other institutions need to be addressed.

The recommended marketing strategies, derived from the SWOT analysis, focus on continuously enhancing product quality, building strong consumer relationships, and utilizing technological advancements. Implementing a social marketing approach—emphasizing education through social media, direct outreach programs, and community campaigns—will help raise public awareness and encourage greater adoption of artificial insemination. By balancing commercial goals, like market expansion, with social goals, such as improving farmers' knowledge, BBIB Singosari can align its efforts with sustainable livestock development objectives.

However, this study has its limitations: it centers on a single region (East Java) and relies on a somewhat limited data set. Future research could broaden the scope to include multiple regions or conduct comparative analyses with other artificial insemination centers, providing a wider view of market trends and social marketing impacts. Additionally, investigating the long-term effects of social marketing campaigns on farmer behavior and livestock productivity would be beneficial. By prioritizing SO strategies, BBIB Singosari can effectively seize market opportunities, leverage its strengths, and maintain its growth trajectory while promoting social marketing in Indonesia's livestock sector.

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