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Original Article

Evaluation of a government-funded business incubation program in the fisheries sector in Indonesia

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Abstract
Government-funded business incubation programs have been increasingly implemented to support micro and small enterprises (MSEs) in Indonesia's fisheries sector; however, their effectiveness is not well understood. Prior studies largely relied on administrative data and manager perspectives, giving limited attention to beneficiary experiences. This study evaluated the effectiveness of a government-funded incubation program targeting fishery processing and marketing MSEs in Indonesia from the viewpoint of incubator tenants. Using importance-performance analysis (IPA), the research examined ten essential program attributes across 47 MSEs that participated in the program between 2018 and 2022. Data were collected through structured questionnaires measuring both perceived importance and actual performance of program services. Statistical analyses including reliability tests, validity tests, and paired *t*-tests revealed significant gaps between importance and performance for all attributes ($p < 0.05$). The IPA matrix placed five attributes in the "Keep Up the Good Work" quadrant (processing technique training, good manufacturing practice/sanitation standard operating procedures training, laboratory testing support, design and packaging support, and promotion materials development), one critical attribute requiring immediate attention in the "Concentrate Here" quadrant (market expansion assistance), and four attributes in the "Low Priority" quadrant (quality certificate assistance, license and permit facilitation, business management training, and financing and investment support). The findings indicated that while the program performed well in technical and operational support, market expansion services required substantial improvement. This study contributed to the limited empirical literature on government-funded fishery incubation programs in developing countries and offered actionable recommendations aligned with stakeholder priorities.

Keywords: business incubation; evaluation; fish processing; government program; importance-performance analysis; Indonesia; micro and small enterprises

1 | INTRODUCTION

Government-funded business incubation has become a critical policy instrument for strengthening micro and small enterprises (MSEs) in developing countries, particularly in sectors with high socio-economic value (Amelia *et al*. 2021) such as fisheries. In Indonesia, the fishery sector plays a strategic role in employment creation and food security (Directorate of Statistical Industry 2024; The

Center for Data, Statistics and Information 2024), yet many MSEs continue to struggle. Despite substantial public investment in incubation initiatives, evidence regarding their effectiveness remains limited. This gap is especially concerning because poorly designed or weakly implemented incubation programs may fail to build meaningful capacity, resulting in low impact and inefficient use of public funds (Pauwels *et al*. 2016). Therefore, evaluating the performance and beneficiary experience of government-funded incubators in the fisheries sector is essential for informing future policy refinement and ensuring that such programs genuinely support MSEs' advancement.

Processing serves as one sustainable method for utilizing fish supplies to address the dietary demands of the community (Panda *et al*. 2022). Although Indonesia has plentiful fish resources, MSEs engaged in fish processing and marketing still encounter persistent challenges and capability constraints (Ratnaningtyas *et al*. 2018; Wasik and Handriana 2023). Market access and marketing capabilities represent primary challenges (Ikhsan *et al*. 2022; Badriyah *et al*. 2023). Most fishery MSEs rely on conventional marketing channels, have limited promotional capacity, and struggle to access broader markets beyond local buyers (Yusuf *et al*. 2024). Weak packaging and branding further limit market reach and product differentiation (Maesano *et al*. 2020). The digital divide exacerbates these challenges, as many fishery MSEs lack the digital literacy and infrastructure necessary to leverage e-commerce and social media marketing channels effectively (Assa and Adirinekso 2020; Abdillah and Al-Amin 2025).

Product quality and regulatory compliance present significant barriers, particularly for MSEs aspiring to enter export markets. International buyers impose strict quality and safety standards that many Indonesian fishery MSEs struggle to meet (FAO 2024; Yusuf *et al*. 2024; Suseno *et al*. 2025). Good Manufacturing Practices (GMP), Sanitation Standard Operating Procedures (SSOP), and quality certification systems are essential but often inadequately addressed (Suseno and Suadi 2021; Kurniawan *et al*. 2022).

Access to finance remains a critical constraint. Fishery MSEs face limited access to formal financial services, restricting their ability to invest in equipment, technology, and market expansion (Sulistyowati and Primyastanto 2021; Badriyah *et al*. 2023). Weak business management skills and limited understanding of financial planning and accounting compound this financial constraint (Widyaningrum *et al*. 2022). Operational and production issues, including waste management, production hygiene, limited equipment, and inefficient processing technologies, affect productivity and product durability (Karim *et al*. 2020). Cleaner production approaches and technology adoption offer potential solutions but require technical training and capital investment that many MSEs cannot afford independently. Together, these structural barriers mean that fish-processing and marketing MSEs are unable to upgrade in the value chain or translate Indonesia's fisheries potential into sustainable local development.

Academic research has covered discussions ranging from broad evaluations of incubation (Albort-Morant and Ribeiro-Soriano 2016; Mian *et al*. 2021) to specific analyses emphasizing customization and specialization (Mian *et al*. 2016; Vanderstraeten *et al*. 2016; Klofsten *et al*. 2020). Recent contributions extend this foundation by highlighting sustainability, governance, and strategic alignment in the implementation (Breu and Kanbach 2025; Mota *et al*. 2025; Petrucci *et al*. 2025). Incubation is believed to be one way to address structural obstacles that constrain business survival and growth (Albort-Morant and Oghazi 2016; Lasrado *et al*. 2016; Hausberg and Korreck 2020; Sohail *et al*. 2023). In Indonesia, several recent studies have documented government, university and private sector-led mentoring, training, and empowerment programs for fishery MSEs (Anggraeni *et al*. 2018; Rizki *et al*. 2019; Ikhsan *et al*. 2022; Husna *et al*. 2023; Wasik and Handriana 2023). These programs typically combine technical training in processing techniques with business development support, recognizing that fishery MSEs require both operational and managerial capacity building.

Despite the wealth of literature on business incubators and other government supports for the development of micro and small enterprises in the fisheries sector, few studies have employed rigorous evaluation methods to systematically assess program performance. Moreover, empirical applications of these structures to fishery sector incubation in developing countries remain scarce. These shortcomings are problematic because they hinder evidence-based policy making and prevent program managers from identifying priority areas for improvement.

This study fills the research gap by evaluating a government-funded fishery business incubation program in Indonesia using importance-performance analysis (IPA), a service quality framework not previously applied to such programs. Proposed by Martilla and James (1977) and applied using diverse contexts including tourism, education, healthcare, and public services (Wong *et al*. 2011; Sever 2015; Ormanović *et al*. 2017; Hinderks *et al*. 2020; Shen *et al*. 2024; Widiastutie *et al*. 2025), IPA identifies strengths, weaknesses, and priorities by assessing the importance stakeholders place on service attributes versus their satisfaction. Applying IPA here provides actionable insights to improve the program based on incubatees' needs and experiences.

The primary objectives of this study are threefold: (1) to assess the perceived importance and actual performance of key attributes of the fishery business incubation program from the perspective of participating MSEs; (2) to identify performance gaps and priority areas for program improvement using the IPA framework; and (3)

to provide evidence-based recommendations for enhancing the effectiveness of government-funded fishery business incubation programs in Indonesia. The findings contribute to both academic literature on business incubation evaluation and practical knowledge for policy makers and program managers seeking to optimize support services for fishery MSEs.

2 | METHODOLOGY

2.1 Research design

This study employs a quantitative, cross-sectional approach that uses survey for data collection. The evaluation framework is grounded in Importance-Performance Analysis (IPA), which provides a structured approach to assessing service quality and identifying improvement priorities based on stakeholder perspectives (Martilla and James 1977; Wong *et al*. 2011; Ormanović *et al*. 2017). The research design integrates descriptive statistics, reliability and validity testing, and inferential statistical analyses to ensure robust and comprehensive evaluation.

2.2 Research context and program description

The research was conducted within the context of a government-funded business incubation program supporting MSEs involved in the processing and marketing of fishery products in Indonesia. The program was implemented nationwide and targeted MSEs that successfully passed the program administrator's formal selection process, in accordance with regulation number 26/2017 of the Director General of Strengthening the Competitiveness of Marine and Fishery Products, Ministry of Marine Affairs and Fisheries of Indonesia. In total, between the years of 2018 and 2022, the program supported 67 MSEs located in 17 provinces across Indonesia. Of these beneficiaries, 57 MSEs were engaged in the processing of fish- or seaweed-based food, beverage, and snack products, while the remaining 10 MSEs operated in the ornamental fish trade sector. The program aimed to transform traditional fishery micro and small enterprises into competitive, sustainable businesses capable of meeting domestic and international market standards by offering organized support that includes technical training, business management guidance, market access facilitation, and regulatory compliance assistance. Program facilitators delivered a structured curriculum over a 24-month period, providing ongoing mentoring and follow-up support.

2.3 Population and sample

A purposive sampling was employed to include only beneficiaries who received the standard intervention package. Purposive sampling is suitable when selecting units with characteristics essential to the study's analytical aims (Etikan *et al*. 2016). Of 67 participating MSEs in the program between 2018 and 2022, 57 met this criterion and formed the target population (Table 1). Ten MSEs that sold ornamental fish were excluded as they received different supports compared to the MSEs that processed products. Data collection attempted a census of all 57, yielding 47 valid responses (82.5%).

TABLE 1 Locations and number of the respondents of the evaluation survey of the government-funded business incubation program in the fisheries sector in Indonesia.

Location (province)	MSEs	
	Expected respondents	Final respondents
West Sumatera	1	1
South Sumatera	1	1
Bangka Belitung Archipelago	2	1
Riau Archipelago	2	2
Lampung	1	1
Banten	2	1
West Java	16	13
Central Java	4	2
East Java	7	7
Special Region of Yogyakarta	1	0
East Kalimantan	1	1
Central Kalimantan	1	1
South Kalimantan	1	0
North Sulawesi	2	1
South Sulawesi	2	2
Maluku	4	4
West Nusa Tenggara	9	9
Total	**57**	**47**

2.4 Data collection

Data collection was conducted through the distribution and return of questionnaires via postal correspondence in Indonesia, in August 2024. The questionnaires were distributed by postal mail because respondents were geographically dispersed across distant regions. Postal delivery ensured accessibility for participants with limited internet access and avoided the logistical, time, and cost constraints associated with in-person data collection.

The instrument comprised three sections. Section A captured demographic profile information, including gender, age, education, and years of experience in the fishery sector. Section B measured performance perceptions across ten program attributes using a 6-point Likert scale (1 = Very dissatisfied to 6 = Very satisfied), while Section C assessed the importance of the same attributes using an equivalent 6-point scale (1 = Very unimportant to 6 = Very important). The ten attributes evaluated were (1) processing technique training; (2) good manufacturing practice (GMP)/sanitation standard operating procedures (SSOP) training; (3) laboratory testing support; (4) quality certificate assistance; (5) design and packaging support; (6) license and permit facilitation; (7) business management training; (8) financing and investment support; (9) market expansion assistance; and (10) promotion materi-

als development. These attributes were the supports provided during the implementation of the business incubation program. The program administrator developed these supports, considering the prevalent challenges encountered by processing and marketing MSEs in the fisheries sector in Indonesia. The program implementation reports documented these assistances (BBP2HP 2018 2019; BBP3KP 2020, 2021, 2022, 2023).

The questionnaire was developed from program documentation, literature, and consultations with program administrator. A 6-point scale was chosen to minimize central tendency bias (Nemoto and Beglar 2014). Prior pilot testing with four non-respondent MSEs that participated in the program in 2023 confirmed its clarity and usability.

This research adhered to ethical principles for social science research. Participation was voluntary, informed consent was obtained, respondent confidentiality was maintained through anonymization of data, and no identifiable information was reported. The study posed minimal risk to participants and was conducted with the knowledge and cooperation of program administrator.

2.5 Data analysis

Data analysis was conducted through several sequential procedures. First, demographic characteristics of survey respondents were summarized. Reliability analysis was then performed using Cronbach's Alpha to assess internal consistency, with thresholds of ≥ 0.70 acceptable, ≥ 0.80 good, and ≥ 0.90 excellent (Nunnally and Bernstein 1994). Construct validity was examined through corrected item-total correlations using Pearson coefficients; items exceeding 0.30 and significant at $p < 0.05$ were deemed valid. Thereafter, descriptive statistics were used to show performance and importance ratings. Because the performance and importance variables were measured using Likert-type ordinal scales, and because the study employed descriptive reliability and validity analysis that do not require the assumption of normality, no formal normality testing was conducted. Normality testing is also considered inappropriate for Likert-type data, as such data are discrete, bounded, and not expected to follow a normal distribution (Norman 2010; Rhemtulla *et al*. 2012). Paired samples *t*-tests were then used to determine whether statistically significant gaps existed between performance and importance ratings for each attribute, thereby identifying priority areas for improvement. Ultimately, the fundamental analytical method, IPA, was employed to position each attribute on a two-dimensional matrix, with importance ratings represented on the vertical axis and performance ratings on the horizontal axis. Attributes were classified into four quadrants: (I) Keep Up the Good Work: high importance and high performance, for attributes that performed well on dimensions valued by stakeholders; (II) Concentrate Here: high importance but low performance, for critical attributes requiring immediate improvement; (III) Low Priority: low importance and low performance, for attributes of lesser concern; (IV) Possible Overkill: low importance but high performance, for attributes where resources might be reallocated. All analyses were conducted using the standard version of Microsoft Excel, with statistical significance set at $\alpha = 0.05$.

3 | RESULTS

The study included 47 fishery processing MSEs who had participated in the government-funded business incubation program between 2018 and 2022. The demographic profile revealed several notable characteristics (Table 2). The majority of respondents were female (72.34%), reflecting the significant role of women in fishery processing and marketing activities in Indonesia. The mean age of 46.9 years indicated that program participants were entrepreneurs with older age distribution and substantial life experience. Educational attainment was relatively high, with 53.19% holding bachelor's degrees and an additional 8.51% holding master's degrees, suggesting that the program had attracted relatively educated entrepreneurs. The average business experience was approximately 10 years, implying that participants were seasoned entrepreneurs aiming to enhance and standardize their operations.

Reliability analysis showed strong internal consistency for both scales, with Cronbach's Alpha of 0.884 for the performance scale and 0.893 for the importance scale, indicating that the ten items consistently measured their respective constructs (≥ 0.80 good). Construct validity, assessed through corrected item-total correlations, was also confirmed, as all items exceeded the 0.30 threshold ($p < 0.05$; Table 3).

Descriptive statistics demonstrated that all attributes received high performance ratings, yet importance ratings were consistently higher, producing negative gaps from –0.15 to –0.55, as displayed in Table 4. This indicated that the program, while generally well perceived, did not fully meet stakeholder expectations. The largest gaps appeared for license and permit facilitation (–0.55), market expansion assistance (–0.47), and business management training (–0.47). The smallest gaps were for laboratory testing support (–0.15) and GMP/SSOP training (–0.21). Overall, the mean gap of –0.37 reflected a consistent shortfall across the program attributes.

The paired *t*-tests revealed that all ten performance-importance gaps were statistically significant ($p < 0.05$), with seven significant at $p < 0.01$ (Table 4). In every case, mean importance scores exceeded mean performance scores, indicating consistent performance shortfalls. The significance of all gaps highlighted the need for systematic improvements across the program's service portfolio.

The importance-performance analysis (IPA) matrix

was constructed using the grand means as quadrant dividing lines (performance grand mean = 5.234; Importance grand mean = 5.596) as shown in Figure 1.

TABLE 2 Demographic profile of respondents of the evaluation survey of the government-funded business incubation program in the fisheries sector in Indonesia. The study involved 47 respondents, was conducted in Indonesia, and the data were collected in August 2024.

Demographic profile	Respondent (person)	Proportion (%)
Gender		
Male	13	27.66
Female	34	72.34
Age		
< 30	1	2.13
30 – 39	12	25.53
40 – 49	17	36.17
50 – 59	13	27.66
60 years and above	4	8.51
Education level		
Elementary School	2	4.26
Secondary School	3	6.38
High School	10	21.28
Diploma	3	6.38
Bachelor	25	53.19
Master	4	8.51
Years of experience		
< 5 years	3	6.38
5 – 9 years	20	42.55
10 – 14 years	17	36.17
15 years and above	7	14.89

TABLE 3 Validity test results of ten program attributes tested in the evaluation survey.

Attribute	Performance scale CITC	Importance scale CITC
Processing technique training	0.444	0.675
GMP/SSOP training	0.477	0.761
Laboratory testing support	0.355	0.690
Quality certificate assistance	0.450	0.628
Design and packaging support	0.542	0.696
License and permit facilitation	0.686	0.729
Business management training	0.798	0.564
Financing and investment support	0.744	0.491
Market expansion assistance	0.818	0.691
Promotion materials development	0.805	0.568

The IPA classification produced four quadrant distributions. Quadrant I (Keep Up the Good Work) contained five attributes: processing technique training, GMP/SSOP training, laboratory testing support, design and packaging support, and promotional materials development. These represented program strengths, indicating strong performance in technical and product-development services valued by stakeholders. Quadrant II (Concentrate Here) included one attribute, market expansion assistance, identifying it as the most urgent priority for improvement, as it was rated highly important yet performed below the grand mean. Quadrant III (Low Priority) comprised four attributes: quality certificate assistance, license and permit facilitation, business management training, and financing and investment support. Although these areas showed performance gaps, their relatively lower importance made them secondary priorities, though all importance scores remained high in absolute terms (I > 5.21). Quadrant IV (Possible Overkill) contained no attributes, suggesting the program did not over-invest in low-value activities and maintained reasonable alignment with stakeholder priorities.

4 | DISCUSSION

4.1 Interpretation of findings

The findings of this study offered important insights into the effectiveness of the government-funded fishery business incubation program and highlighted clear priorities for improvement. The IPA results showed that while the program performed strongly in technical training and product development support, it struggled significantly in market expansion assistance, which is one of the most fundamental constraints on the competitiveness of fishery MSEs in Indonesia (Anggraeni *et al*. 2018; Yusuf *et al*. 2024; Abdillah and Al-Amin 2025).

4.1.1 Program strengths: technical and operational support

Five attributes (processing technique training, GMP/SSOP training, laboratory testing support, design and packaging support, and promotional materials development) fell into quadrant I, indicating that the program consistently delivered strong technical and operational support. These findings aligned well with the role of the Ministry of Marine Affairs and Fisheries as program administrator, which traditionally maintains strong technical expertise in fish processing, quality assurance, and post-harvest technology (Suseno and Suadi 2021; Ikhsan *et al*. 2022).

Laboratory testing support achieved the highest performance rating (M = 5.553), underscoring its importance for MSEs seeking to meet domestic and export-level quality standards. This strength addressed quality assurance gaps that often limit small-scale fish processors (FAO 2024; Suseno *et al*. 2025). The strong performance of GMP/SSOP training similarly responded to hygiene and regulatory compliance challenges widely documented among Indonesian fishery MSEs (Kurniawan *et al*. 2022).

Design and packaging support also emerged as a key strength. Previous research has shown that poor packag-

ing, weak branding, and limited product differentiation consistently undermine the competitiveness of small fishery enterprises (Anggraeni *et al*. 2018; Ikhsan *et al*. 2022; Yusuf *et al*. 2024; Abdillah and Al-Amin 2025). The program's ability to address these barriers indicated that its support components were well designed, relevant, and effectively delivered. These strengths collectively suggested that the program had built a solid technical foundation for product quality improvement and value addition.

TABLE 4 Descriptive statistics and paired *t*-test results of ten program attributes tested in the evaluation survey.

Attribute	Perf (Mean±SD)	Imp (Mean±SD)	Gap (Perf – Imp)	*p*-value (paired *t*-test)
Processing technique training	5.298±0.55	5.660±0.48	–0.36	0.000025
GMP/SSOP training	5.447±0.54	5.660±0.48	–0.21	0.002879
Laboratory testing support	5.553±0.54	5.702±0.51	–0.15	0.017932
Quality certificate assistance	5.213±0.72	5.574±0.62	–0.36	0.000338
Design and packaging support	5.426±0.85	5.702±0.46	–0.28	0.017852
License and permit facilitation	5.021±1.03	5.574±0.50	–0.55	0.000413
Business management training	5.064±0.84	5.532±0.55	–0.47	0.000495
Financing and investment support	4.872±0.85	5.213±0.72	–0.34	0.016628
Market expansion assistance	5.213±0.93	5.681±0.47	–0.47	0.000495
Promotion materials development	5.234±0.91	5.660±0.52	–0.43	0.000968
Grand mean	5.234	5.596	–0.37	

Perf: Performance scale; Imp: Importance scale.

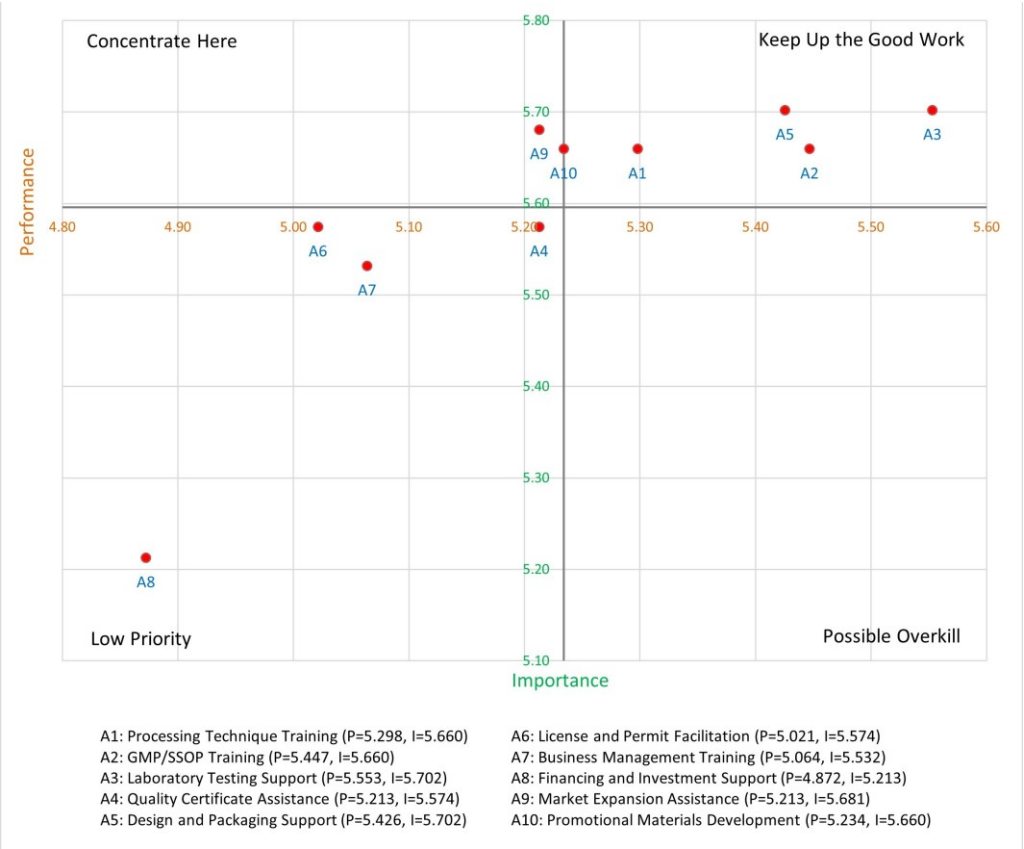

FIGURE 1 Importance-Performance Analysis (IPA) Matrix of the attributes of the government-funded business incubation program in the fisheries sector in Indonesia. Five attributes were in "Keep Up the Good Work" quadrant, one attribute was in "Concentrate Here" quadrant, and four attributes were in "Low Priority" quadrant.

4.1.2 Critical gap: market expansion assistance

The placement of market expansion assistance in quadrant II represented the most critical finding of this study. Despite being the most important attribute for participants (M = 5.681), it performed below the grand mean (M = 5.213). This was particularly concerning because market access remains the central challenge for fishery MSEs, even when their technical capabilities improve (Ikhsan *et al*. 2022; Badriyah *et al*. 2023).

Previous studies consistently identified limited market channels, weak buyer linkages, and difficulties in accessing broader markets as major obstacles for Indone-

sian fishery MSEs (Anggraeni *et al*. 2018; Badriyah *et al*. 2023; Yusuf *et al*. 2024). While the incubation program successfully strengthened technical skills, the lack of strong market facilitation meant that improved products often failed to reach appropriate buyers or achieve expanded sales volumes (Assa and Adirinekso 2020; FAO 2024). Without strong market development support, the long-term sustainability of the program's technical achievements remained uncertain.

Several factors may explain this gap. Market expansion requires specialized competencies, such as market intelligence, commercial negotiation skills, and buyer networks, that differ from technical training expertise (Hausberg and Korreck 2020; Fithri *et al*. 2024; Breu and Kanbach 2025). The implementing agency may possess strong technical capacity but fewer resources or networks in market development. Market access is also inherently complex, requiring ongoing collaboration beyond the standard incubation period (Albort-Morant and Oghazi 2016; Hausberg and Korreck 2020). Additionally, structural issues such as logistical barriers and high distribution costs may limit market reach in ways that technical training alone cannot overcome (Assa and Adirinekso 2020; Abdillah and Al-Amin 2025).

4.1.3 Low priority attributes: regulatory and financial support

Four attributes (quality certificate assistance, license and permit facilitation, business management training, and financing and investment support) fell into quadrant III. Although these attributes received lower relative importance ratings, their absolute importance scores remained high, suggesting that they should not be dismissed entirely.

This pattern may reflect several dynamics. First, incubatees may undervalue these services because they tend to perceive regulatory processes, financial planning, and business management skills as less urgent than immediate market outcomes. Yet, these attributes are often essential for long-term growth, formalization, and entry into structured supply chains (Anggraeni *et al*. 2018; Suseno and Suadi 2021; Ikhsan *et al*. 2022; Suseno *et al*. 2025).

Second, the sample consisted of MSEs that had already progressed through the program, meaning they may have possessed relatively higher baseline business capacities than non-participants. As a result, these services may have appeared less important to them.

Third, despite their lower importance ratings, performance in these areas was still below the grand mean. In particular, financing and investment support received the lowest performance rating (M = 4.872), demonstrating a real program weakness. Limited access to investment continues to be a significant limitation for Indonesian fishery MSEs (Sulistyowati and Primyastanto 2021), and the program might enhance its effectiveness by establishing better connections with credit institutions, microfinance organizations, or impact investors (Badriyah *et al*. 2023).

4.2 Theoretical implications

This study contributed several theoretical insights to the literature on business incubation. First, it demonstrated that importance-performance analysis can serve as a practical and effective evaluation framework for business incubation programs. By centering stakeholder perceptions, IPA provided a visually clear diagnostic tool that highlighted both program strengths and areas requiring urgent improvement.

Second, the findings supported knowledge-based views of incubation, which emphasize capability-building as a core mechanism of incubation success (Kurniawan *et al*. 2022; Fithri *et al*. 2024; Yusuf *et al*. 2024). At the same time, they highlighted that capability enhancement alone is insufficient without parallel efforts to strengthen market access (Albort-Morant and Oghazi 2016; Breu and Kanbach 2025). These results suggested that effective incubation in the fishery sector requires a solid integration of technical capability development, resource and financial support, and market linkage facilitation.

Third, the study contributed to the limited empirical literature on fisheries-focused incubation in developing countries. By documenting sector-specific performance patterns, the study underscored the unique challenges that fishery MSEs face and the need for incubation models tailored to these conditions (Anggraeni *et al*. 2018; Ikhsan *et al*. 2022).

4.3 Practical recommendations

The study produced several practical recommendations. The top priority was strengthening market expansion support through buyer linkage programs, structured market intelligence, digital marketing access, export preparation, and alumni-based collective marketing. These efforts are consistent with research highlighting the importance of innovation, partnerships, and market orientation in fishery sector competitiveness (Anggraeni *et al*. 2018; Badriyah *et al*. 2023; Yusuf *et al*. 2024; Breu and Kanbach 2025). The program should also maintain strong technical training by documenting best practices, implementing train-the-trainer initiatives, and developing resource libraries (Fithri *et al*. 2024). Additionally, targeted improvements in business management, financing facilitation, and regulatory support would strengthen long-term MSEs resilience through sector-specific models, financial partnerships, and streamlined licensing (Breu and Kanbach 2025; Suseno *et al*. 2025).

4.4 Limitations and future research directions

The study had several limitations. Its cross-sectional de-

sign captured perceptions at only one point in time and could not track changes throughout the incubation period. Respondents may also have been influenced by social desirability bias, given the program's government affiliation. The absence of comparison groups limited attribution claims. Additionally, IPA does not capture interdependencies among attributes, such as how quality certification may be necessary before market expansion is fully effective.

Future research should pursue longitudinal studies to track long-term impacts, comparative evaluations across different incubation programs, and process-based investigations into how incubation services translate into outcomes. Studies capturing multiple stakeholder perspectives, including mentors, buyers, and government staff, would also generate a more holistic understanding of program effectiveness.

5 | CONCLUSIONS

This study evaluated a government-funded fishery business incubation program in Indonesia using Importance-Performance Analysis, offering a stakeholder-centered, prioritization-oriented approach that generates actionable recommendations. The identification of market expansion as the sole attribute in the "Concentrate Here" quadrant provides clear guidance for program improvement: enhancing market access facilitation should be the immediate priority for resource allocation and program redesign. This study offers evidence-based guidance for optimizing fishery business incubation programs. By maintaining strengths in technical training while substantially enhancing market expansion support, programs can better address the multifaceted constraints facing fishery MSEs and contribute more effectively to sector competitiveness, fishery community livelihoods, and national economic development.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

AUTHORS' CONTRIBUTION

Data Collection: DWH; Data Analysis: DWH & LK; Manuscript Preparation: DWH, LK & LX; Review and Supervision: LX. All authors read and approved the final manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on a reasonable request from the corresponding author.

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