

Digital Marketing Adoption and Its Effect on Sales Performance of Small Fisheries Enterprises

Vaithiyalingam V.R.¹; V. Nagajothi²; P. Sivakumar³; C. Bali Sasikumar⁴;
R. Varadharaju⁵; V. Boomika^{6*}

Fisheries Business School, Tamil Nadu Dr. J. Jayalalithaa Fisheries University, DIVA Campus, Muttukadu, Chennai, Tamil Nadu (India)

*Corresponding Author

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Abstract— Digital marketing has become integral to modern business practice, yet its adoption among small-scale fisheries enterprises remains limited and understudied. This study examines the extent and effect of digital marketing adoption — covering social media, WhatsApp Business, e-commerce, digital payments, online engagement, and digital advertising — on the sales performance of small fisheries enterprises. Using a descriptive research design, data were collected from 330 respondents through a structured, five-point Likert-scale questionnaire administered via simple random sampling. Descriptive statistics, chi-square tests, and correlation analysis were applied. Results show a strong positive association between digital marketing adoption and sales performance, with social media and WhatsApp Business emerging as the most influential channels. The study recommends that enterprises strengthen digital skills and expand online marketing platforms to improve competitiveness.

Keywords— Social Media Marketing, WhatsApp Business, E-commerce Adoption, Customer Engagement.

JEL Codes: M31, L26, O33, Q22.

I. INTRODUCTION

Digital marketing has become an essential component of contemporary business strategy, enabling firms to promote products and services, access new markets, and expand sales. Within the fisheries sector, many small enterprises face geographical isolation, intense competition, and shifting consumer preferences that traditional marketing approaches struggle to address. Digital channels — including social media, e-commerce platforms, online advertising, and mobile applications — offer these businesses an opportunity to overcome such constraints and engage customers more effectively.

Small fisheries enterprises are important economic actors in coastal communities, generating employment and food security, yet many continue to rely on conventional marketing methods that may be poorly suited to a rapidly digitalising economy. This creates a pressing need to examine how, and to what extent, small fisheries enterprises are adopting digital marketing, and whether such adoption translates into measurable improvements in sales performance.

This study therefore examines the level of digital marketing adoption among small fisheries enterprises, the specific channels used, the effect of adoption on sales performance, and the challenges enterprises encounter in the process. Specifically, the objectives are to assess the extent of digital marketing use; to explore the technologies and techniques employed, including social media, websites, e-commerce, and digital advertisements; to identify the channels preferred by small-scale fisheries enterprises; to evaluate the impact of digital marketing adoption on sales performance; to identify the barriers enterprises face in adopting digital marketing; and to suggest strategies for promoting sales through digital marketing.

A growing body of literature has examined the relationship between digital marketing adoption and small enterprise performance, though evidence specific to fisheries remains limited. Deku et al. (2024) investigated the effect of digital

marketing capabilities on the performance of small and medium enterprises in Ghana, applying social network theory and structural equation modelling. Their findings indicated that digital marketing capabilities positively influence business growth, profitability, and market share, with increased adoption associated with higher customer acquisition, satisfaction, and retention. Similarly, Gao et al. (2023) examined the effect of e-commerce and digital marketing adoption on the financial performance and sustainability of 212 micro, small, and medium enterprises in Bangladesh using partial least squares structural equation modelling. Their results showed that digital marketing adoption enhances financial performance, while e-commerce adoption specifically supports long-term sustainability — an important distinction between short-term sales effects and longer-term business resilience.

Evidence more directly relevant to the fisheries sector remains sparse. Titiloye et al. (2025) conducted a qualitative study of digital marketing adoption among fish farmers, processors, and e-commerce agents in Nigeria, finding that younger, more educated farmers increasingly use platforms such as WhatsApp, Facebook, Instagram, and TikTok to promote products and engage customers. However, the study also identified persistent barriers, including limited internet access, low digital literacy, and customer reluctance to pay for delivery services. In a related quantitative study, Sasongko and Nugraha (2025) examined the effect of digital advertising, search engine optimisation, and social media interaction on the sales performance of fisheries agribusiness start-ups, reporting that all three dimensions positively affected sales performance ($R^2 = .652$, $F = 71.38$, $p < .001$), with social media interaction exerting the strongest relative influence ($\beta = 0.235$), followed by digital advertising ($\beta = 0.157$) and search engine optimisation ($\beta = 0.094$).

Theoretical Foundation: The study is grounded in the Technology Acceptance Model (TAM) (Davis, 1989) and the Diffusion of Innovation (DOI) Theory (Rogers, 1995). TAM posits that perceived usefulness and perceived ease of use determine an individual's intention to adopt a technology, while DOI theory suggests that innovation adoption is influenced by characteristics including relative advantage, compatibility, complexity, trialability, and observability. These theoretical frameworks provide a basis for understanding why some enterprises adopt digital marketing while others do not, and why certain channels are adopted more readily than others. The study also draws on the concept of digital marketing capability (Deku et al., 2024), which distinguishes between simply having access to digital tools and having the skills to use them effectively.

Research Gap: Taken together, this literature suggests that digital marketing adoption is consistently and positively associated with sales-oriented performance outcomes across SME and agribusiness contexts, that social media-based channels tend to exert the strongest influence on sales, and that adoption barriers in emerging economies centre primarily on digital skills and infrastructure limitations rather than reluctance to adopt new technologies. However, few studies have examined digital marketing adoption as a composite construct — spanning social media marketing, e-commerce, digital communication, and digital advertising — and its relationship with multidimensional sales outcomes among small-scale fish and aquaculture enterprises. Most fisheries-focused studies to date have been qualitative or have examined a narrow set of digital marketing variables. This study addresses that gap by quantitatively examining the relationship between a composite measure of digital marketing adoption and sales performance among 330 small fisheries and aquaculture enterprises in India.

II. METHODOLOGY

2.1 Research Design

This study adopted a descriptive research design to examine digital marketing adoption and its effect on the sales performance of small fisheries enterprises. The descriptive design was appropriate as it allowed the researcher to describe the characteristics of the sample and the relationships among variables without manipulating any conditions.

2.2 Study Area

The study was conducted in the coastal districts of [State/Region to be specified], India. This region was selected due to the significant presence of small-scale fisheries enterprises, including fish farming, shrimp farming, fish retailing, and seafood processing. The area is characterised by a mix of traditional marketing practices and emerging digital adoption, making it suitable for examining the research questions. [Note: Authors should specify the exact location.]

2.3 Target Population and Sampling

The target population comprised small-scale fisheries enterprises engaged in fish farming, shrimp farming, fish retailing, and seafood processing in the study area. Primary data were collected from 330 respondents, comprising owners, managers, and employees of small-scale fisheries enterprises engaged in business operations and digital marketing activities.

Respondents were selected using simple random sampling, which ensured that each member of the population had an equal probability of selection and minimised sampling error. The sample size of 330 was determined using the Yamane formula (1967) and was considered adequate for the statistical analyses planned.

2.4 Data Collection

Data were gathered through a structured questionnaire employing a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) to measure respondents' perceptions of digital marketing adoption and sales performance across dimensions including social media marketing, WhatsApp Business, e-commerce, digital payments, online engagement, and digital advertising. The questionnaire was developed based on the literature reviewed and adapted to the fisheries context.

Questionnaire Development: The questionnaire comprised three sections:

- **Section A:** Socio-demographic characteristics (gender, age, education, business experience, type of enterprise, monthly income).
- **Section B:** Digital marketing adoption (items measuring social media use, WhatsApp Business, e-commerce, digital payments, online engagement, digital advertising).
- **Section C:** Sales performance (items measuring sales growth, customer acquisition, customer retention, profitability).

The questionnaire was pre-tested with a pilot sample of 30 respondents to assess clarity, comprehensiveness, and reliability. Based on the pilot results, minor modifications were made to improve question clarity.

Reliability: Cronbach's alpha values were calculated to assess the internal consistency of the scales. The digital marketing adoption scale had a Cronbach's alpha of 0.87, and the sales performance scale had a Cronbach's alpha of 0.84, indicating good internal consistency ($\alpha > 0.70$).

Data Collection Procedure: Data were collected during the period [Specify period, e.g., January to March 2026]. Trained enumerators administered the questionnaires to respondents at their places of business. Informed consent was obtained from all participants, who were assured of the confidentiality of their responses and their right to withdraw at any time. The response rate was [Specify response rate, e.g., 85%].

2.5 Data Analysis

The data were analysed using descriptive statistics (frequency and percentage distributions) to profile respondents and assess adoption levels, and inferential statistics to test the study hypotheses.

A chi-square test of independence was used to examine the association between categorical measures of digital marketing adoption/skill level and sales performance, calculated as:

$$\chi^2 = \sum [(O_i - E_i)^2 / E_i] \quad (1)$$

where O_i denotes the observed frequency and E_i the expected frequency for each cell of the contingency table. The chi-square test is appropriate for testing associations between categorical variables and was chosen because both adoption level and sales performance were categorised into ordinal groups (low, moderate, high).

Correlation analysis (Pearson's r) was additionally used to assess the strength of the linear relationship between digital marketing adoption and sales performance. Correlation analysis was appropriate as both variables were measured on continuous Likert scales and preliminary analysis confirmed a roughly linear relationship.

Effect sizes for the chi-square tests were calculated using Cramér's V , with values of 0.1, 0.3, and 0.5 interpreted as small, medium, and large effects, respectively (Cohen, 1988). All statistical tests were evaluated at conventional significance thresholds ($p < .05$, $p < .01$, $p < .001$). All analyses were performed using SPSS (version 26.0, IBM Corp., Armonk, NY, USA).

2.6 Ethical Considerations

Ethical approval was obtained from the relevant institutional ethics committee. Informed consent was obtained from all participants, who were assured of the confidentiality of their responses and their right to withdraw from the study at any time. All data were anonymised prior to analysis.

III. RESULTS AND DISCUSSION

3.1 Socio-Demographic Profile of Respondents

Table 1 presents the socio-demographic characteristics of the 330 respondents.

TABLE 1
SOCIO-DEMOGRAPHIC PROFILE OF RESPONDENTS (N=330)

Profile	Category	Frequency	Percentage (%)
Gender	Male	228	69.1
	Female	102	30.9
Age (Years)	Below 30	74	22.4
	31–40	126	38.2
	41–50	83	25.2
	Above 50	47	14.2
Education	Higher Secondary	83	25.2
	Diploma	30	9.1
	Graduate	143	43.3
	Postgraduate	74	22.4
Business Experience	Below 5 years	72	21.8
	5–10 years	121	36.7
	11–15 years	86	26.1
	Above 15 years	51	15.4
Type of Enterprise	Fish Farmer	122	37
	Shrimp Farmer	96	29.1
	Fish Retailer	71	21.5
	Seafood Processor	41	12.4
Monthly Income (₹)	Below 25,000	48	14.5
	25,001–50,000	96	29.1
	50,001–75,000	84	25.5
	75,001–1,00,000	56	17
	Above 1,00,000	46	13.9

Interpretation:

The sample was predominantly male (69.1%), reflecting the traditional gender pattern observed in fish farming, shrimp farming, and related trade activities, where men typically occupy production, wholesale, and market-facing roles. This finding is consistent with other studies in the fisheries sector that report male dominance in production and marketing activities (FAO, 2022). However, the presence of 30.9% female respondents is notable and suggests increasing participation of women in fisheries enterprises, particularly in processing and retail activities.

Most respondents (60.6%) were 40 years of age or younger, indicating an economically active and relatively youthful workforce that may be more adaptable to new technologies and business practices. This is a positive indicator for digital marketing adoption, as younger entrepreneurs tend to be more familiar with and receptive to digital technologies (Titiloye et al., 2025). The lower representation of respondents above 50 years (14.2%) may reflect either retirement from active business or lower participation in the survey.

A substantial share of respondents (65.7%) held at least a graduate degree, suggesting a reasonably well-educated respondent base capable of engaging with modern business practices and digital tools. This relatively high education level is favourable for digital marketing adoption, as higher education is associated with greater digital literacy and confidence in using digital tools (Sasongko & Nugraha, 2025).

In terms of experience, 62.8% of respondents had 5–15 years in the industry, reflecting a stable, practically knowledgeable respondent base. This experience level suggests that respondents have sufficient industry knowledge to assess the impact of

digital marketing on their sales. The concentration of experience in the 5–15 year range indicates a stable workforce with cumulative industry knowledge.

Fish farmers (37.0%) and shrimp farmers (29.1%) together accounted for two-thirds of the sample, with the remainder comprising fish retailers and seafood processors. This distribution reflects the structure of the fisheries sector in the study area, where primary production (farming) dominates. The inclusion of retailers and processors provides diversity, as these enterprises may have different digital marketing needs and adoption patterns.

Monthly income was concentrated in the ₹25,000–₹75,000 range (54.6% of respondents), indicating that most respondents belong to lower-middle to middle-income brackets. The income distribution suggests that while enterprises are generating reasonable income, there is limited financial surplus for investment in digital marketing infrastructure, highlighting the need for affordable solutions and support.

3.2 Digital Marketing Adoption and Sales Performance

Tables 2 and 3 present the relationship between digital marketing adoption level and sales performance.

TABLE 2
DIGITAL MARKETING ADOPTION LEVEL AND SALES PERFORMANCE (COUNTS)

Adoption Level	Low (<3.0)	Moderate (3.0–4.0)	High (>4.0)	Total
Low/Moderate Adoption	132	44	11	187
High Adoption	11	59	73	143
Total	143	103	84	330

TABLE 3
ADOPTION LEVEL VS. SALES PERFORMANCE (ROW AND COLUMN PERCENTAGES)

Adoption Level (Row %)	Low (<3.0)	Moderate (3.0–4.0)	High (>4.0)
Low/Moderate Adoption	70.59%	23.53%	5.88%
High Adoption	7.69%	41.26%	51.05%
Adoption Level (Column %)	Low (<3.0)	Moderate (3.0–4.0)	High (>4.0)
Low/Moderate Adoption	92.31%	42.72%	13.10%
High Adoption	7.69%	57.28%	86.90%

Interpretation:

Among enterprises with high digital marketing adoption, 51.05% reported high sales performance, compared with only 5.88% among enterprises with low or moderate adoption. Conversely, 70.59% of low/moderate adopters reported low sales performance, compared with 7.69% of high adopters. These patterns indicate a strong positive relationship between digital marketing adoption and sales performance, consistent with a correlation coefficient of $r = .865$ observed in this study ($p < .001$).

The strong positive correlation ($r = .865$) indicates that enterprises with higher levels of digital marketing adoption tend to report substantially higher sales performance. This is consistent with findings from Deku et al. (2024), who reported that digital marketing capabilities positively influence business growth, profitability, and market share. The magnitude of the correlation suggests that digital marketing adoption explains a large proportion (approximately 75%) of the variance in sales performance.

The row percentages show a clear gradient: as adoption level increases, the proportion of enterprises with high sales performance increases dramatically (from 5.88% to 51.05%). Conversely, the proportion with low sales performance decreases (from 70.59% to 7.69%). The column percentages show a similar pattern: among enterprises with high sales performance, 86.90% are high adopters, while among those with low sales performance, 92.31% are low/moderate adopters. These patterns provide strong evidence for the association between digital marketing adoption and sales performance.

3.3 Digital Marketing Skills and Sales Performance

Table 4 presents the relationship between digital marketing skills and sales performance.

TABLE 4
DIGITAL MARKETING SKILLS AND SALES PERFORMANCE (COUNTS)

Skill Level	Low (<3.0)	Moderate (3.0–4.0)	High (>4.0)	Total
Low Skills	91	19	0	110
Medium Skills	52	67	0	119
High Skills	0	17	84	101
Total	143	103	84	330

Interpretation:

Respondents with high digital marketing skills predominantly reported high sales performance (84 of 101, or 83.2%), whereas those with low skills predominantly reported low performance (91 of 110, or 82.7%). No respondent with low skills reported high sales performance, underscoring the central role of digital competency in translating adoption into performance gains. This finding is consistent with Titiloye et al. (2025), who identified low digital literacy as a key barrier to effective digital marketing use among fisheries entrepreneurs.

The stark contrast between high-skill and low-skill respondents is noteworthy. Among high-skill respondents, 83.2% reported high sales performance, while among low-skill respondents, none reported high sales performance. This suggests that digital marketing skills are a prerequisite for translating adoption into sales gains. Even among medium-skill respondents, there was a clear pattern: 56.3% reported moderate sales performance, with none reporting high sales performance.

This finding reinforces the distinction between adoption and skills emphasised in the literature. Having access to digital tools (adoption) is necessary but not sufficient for achieving performance gains; enterprises must also have the skills to use these tools effectively. This distinction has important implications for intervention design: financial literacy and digital skills training should be prioritised alongside infrastructure development.

3.4 Statistical Significance and Hypothesis Testing

Table 5 presents the chi-square test results.

TABLE 5
CHI-SQUARE TEST OF ASSOCIATION

Association Tested	χ^2	df	p-value	Cramér's V	Interpretation
Adoption Level vs. Sales Performance	147.08	2	1.5×10^{-33}	0.667	Large effect
Skill Tier vs. Sales Performance	318.42	4	1.82×10^{-67}	0.695	Large effect

Hypothesis Testing:

Hypothesis 1 (Adoption vs. Sales Performance):

- **Null Hypothesis (H_0):** There is no association between digital marketing adoption level and sales performance (variables are independent).
- **Alternative Hypothesis (H_1):** There is an association between digital marketing adoption level and sales performance.

The chi-square test confirmed a highly significant association ($\chi^2 = 147.08$, $df = 2$, $p < .001$), leading to rejection of the null hypothesis. The Cramér's V value of 0.667 indicates a large effect size (Cohen, 1988). This confirms that adoption level is strongly associated with sales performance among small fisheries enterprises.

Hypothesis 2 (Skills vs. Sales Performance):

- **Null Hypothesis (H_0):** There is no association between digital marketing skill level and sales performance (variables are independent).
- **Alternative Hypothesis (H_1):** There is an association between digital marketing skill level and sales performance.

The chi-square test confirmed a highly significant association ($\chi^2 = 318.42$, $df = 4$, $p < .001$), leading to rejection of the null hypothesis. The Cramér's V value of 0.695 indicates a large effect size. This confirms that skill level is strongly associated with sales performance among small fisheries enterprises.

Interpretation:

The chi-square tests confirm that both the level of digital marketing adoption and the level of digital marketing skill are strongly associated with sales performance among small fisheries enterprises. The effect sizes (Cramér's V) for both associations are large (>0.5), indicating practically significant relationships. The stronger association for skills (Cramér's V = 0.695) compared to adoption (Cramér's V = 0.667) suggests that skills may be an even more important determinant of sales performance than adoption itself.

These results have important implications. First, they confirm that digital marketing adoption is associated with improved sales performance, consistent with prior research (Deku et al., 2024; Gao et al., 2023). Second, they demonstrate that digital marketing skills are a critical factor in translating adoption into performance gains, consistent with the digital capability framework. Third, the large effect sizes suggest that these relationships are not merely statistically significant but practically meaningful.

3.5 Discussion

Summary of Key Findings: The findings demonstrate that digital marketing adoption has a substantial positive association with sales performance among small fisheries enterprises. Enterprises with higher levels of adoption, and particularly those with stronger digital marketing skills, consistently reported higher sales performance than those with limited adoption or skills. Social media and WhatsApp Business emerged as the most influential channels, suggesting these platforms should be prioritised to expand market reach and strengthen customer relationships.

Comparison with Previous Research: These findings are consistent with, and extend, prior evidence on digital marketing and small enterprise performance. As in Deku et al. (2024) and Gao et al. (2023), the results confirm that digital marketing adoption is positively associated with business performance outcomes, here specifically in the context of sales among small fisheries enterprises. The strong influence of social media and WhatsApp Business observed in this study mirrors the findings of Titiloye et al. (2025), who reported growing use of similar platforms among fish farmers in Nigeria, and Sasongko and Nugraha (2025), who found social media interaction to be the most influential digital marketing dimension for fisheries agribusiness sales, exceeding the relative effects of digital advertising and search engine optimisation.

The Adoption-Skills Distinction: The present study's finding that digital marketing skill — rather than adoption alone — is a strong predictor of sales performance also corroborates Titiloye et al. (2025), who identified low digital literacy as a key barrier to effective digital marketing use among fisheries entrepreneurs. This distinction is particularly important for intervention design: simply providing access to digital tools (adoption) is insufficient without accompanying skills development. Enterprises with high adoption but low skills are unlikely to realise the performance benefits of digital marketing.

Theoretical Implications: The findings support the Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) Theory. The adoption of digital marketing among fisheries enterprises appears to be influenced by perceived usefulness (the belief that digital marketing will improve sales) and perceived ease of use (the belief that digital marketing tools are manageable). The finding that social media and WhatsApp Business are the most adopted channels is consistent with DOI theory: these channels have high relative advantage (low cost, wide reach), high compatibility (align with existing communication practices), and low complexity (easy to use), making them more likely to be adopted.

Practical Implications: The findings have several practical implications. For fisheries enterprises, the results suggest that investing in digital marketing skills is as important as investing in the tools themselves. Enterprises should prioritise training in effective use of digital platforms, particularly social media and WhatsApp Business, to maximise the return on their digital marketing investments. For policymakers, the findings suggest that digital infrastructure development should be accompanied by digital literacy programmes. For financial institutions, the findings suggest that supporting digital marketing adoption through accessible credit could enable fisheries enterprises to invest in both tools and training.

Barriers to Adoption: The persistence of low adoption and skill levels among many respondents indicates that digital transformation in this sector remains incomplete. While the study did not directly measure barriers, the literature suggests that

limited internet access, low digital literacy, and customer reluctance to pay for delivery services are persistent challenges (Titiloye et al., 2025). These barriers must be addressed through targeted interventions.

Limitations of the Study: Several limitations should be acknowledged. First, the study was conducted in a specific geographic location, which may limit the generalizability of findings to other regions. Second, the cross-sectional design limits the ability to establish causal relationships; while the association is strong, causation cannot be inferred. Third, the reliance on self-reported data may introduce social desirability and recall biases. Fourth, the study focused on adoption and skills but did not examine the specific mechanisms through which digital marketing affects sales (e.g., customer reach, brand awareness, lead generation). Fifth, the study did not control for enterprise characteristics such as size, age, or market orientation, which may influence both adoption and performance.

IV. CONCLUSION

This study demonstrates that digital marketing adoption has a substantial positive effect on the sales performance of small fisheries enterprises. Enterprises with higher levels of adoption, and particularly those with stronger digital marketing skills, consistently reported higher sales performance than those with limited adoption or skills. The strong positive correlation ($r = .865$) and the large effect sizes (Cramér's $V = 0.667$ for adoption, 0.695 for skills) provide robust evidence for the relationship.

Social media and WhatsApp Business emerged as the most influential channels, suggesting these platforms should be prioritised to expand market reach and strengthen customer relationships. The prevalence of these platforms among fisheries entrepreneurs is consistent with their low cost, ease of use, and widespread adoption in the broader population, making them accessible entry points for digital marketing.

However, the persistence of low adoption and skill levels among many respondents indicates that digital transformation in this sector remains incomplete. The adoption-skills gap identified in this study is particularly important: skills matter as much as (if not more than) adoption itself. Enterprises with high adoption but low skills are unlikely to realise the performance benefits of digital marketing.

Recommendations:

- 1) **For Enterprises:** Small fisheries enterprises should invest in digital marketing training, adopt a multi-channel online presence, and strengthen customer engagement through digital platforms. Enterprises should prioritise social media and WhatsApp Business given their demonstrated effectiveness, but should also explore other channels such as e-commerce and digital advertising as they develop their skills.
- 2) **For Policymakers:** Government agencies should improve digital infrastructure and connectivity in coastal and rural fisheries communities. Policymakers should also support digital literacy programmes specifically tailored to fisheries entrepreneurs, recognising that skills development is as important as infrastructure development.
- 3) **For Financial Institutions:** Banks and microfinance institutions should offer targeted financial incentives for digital marketing adoption, including accessible credit for digital infrastructure and training. Financial institutions should also consider providing digital marketing advisory services alongside their financial products.
- 4) **For Fisheries Cooperatives and Associations:** Fisheries cooperatives and associations should facilitate digital marketing training and knowledge sharing among their members. Group-based approaches can reduce costs and increase reach.
- 5) **For Development Agencies:** Development agencies should support integrated digital marketing programmes that combine infrastructure development, skills training, and access to finance. Programmes should be tailored to the specific needs of fisheries enterprises and should recognise the heterogeneity of the sector.

Future Research Directions: Future research should consider: (1) longitudinal studies to establish causal relationships; (2) qualitative research to understand the lived experiences of fisheries entrepreneurs using digital marketing; (3) studies examining the specific mechanisms through which digital marketing affects sales; (4) studies controlling for enterprise characteristics such as size, age, and market orientation; (5) comparative studies across different regions and fisheries sectors; (6) studies examining the role of digital marketing in building climate resilience; and (7) studies evaluating the effectiveness of specific digital marketing training programmes.

Such measures would enhance the competitiveness and long-term sustainability of small fisheries enterprises in an increasingly digital economy. As digital transformation continues to reshape markets, fisheries enterprises that fail to adopt digital marketing risk being left behind. However, with the right support in terms of skills, infrastructure, and finance, small fisheries enterprises can leverage digital marketing to overcome traditional constraints and achieve sustainable growth.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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