



E-PROCEEDINGS

INTERNATIONAL TINKER INNOVATION & ENTREPRENEURSHIP CHALLENGE (i-TIEC 2025)

"Fostering a Culture of Innovation and Entrepreneurial Excellence"



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23 January 2025
PTDI, UiTM Cawangan Johor
Kampus Pasir Gudang

ORGANIZED BY:

Electrical Engineering Studies, College of Engineering
Universiti Teknologi MARA (UiTM) Cawangan Johor
Kampus Pasir Gudang
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PREFACE

It is with great pleasure that we present the e-proceedings of International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), which compiles the extended abstracts submitted to the International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), held on 23 January 2025 at **PTDI, Universiti Teknologi MARA (UiTM) Cawangan Johor, Kampus Pasir Gudang**. This publication serves as a valuable resource, showcasing the intellectual contributions on the invention and innovation among students, academics, researchers, and professionals.

The International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), organized under the theme "Fostering a Culture of Innovation and Entrepreneurial Excellence," is designed to inspire participants at various academic levels, from secondary students to higher education students and professionals. The competition emphasizes both innovation and entrepreneurship, encouraging the development of product prototypes that address real-world problems and have clear commercialization potential. By focusing on technological and social innovations, i-TIEC 2025 highlights the importance of turning creative ideas into viable, market-ready solutions that can benefit users and society. The extended abstracts in this e-proceedings book showcase the diverse perspectives and depth of research presented during the event, reflecting the strong entrepreneurial element at its core.

We extend our sincere gratitude to the contributors for their dedication in sharing their innovation and the organizing committee for their hard work in ensuring the success of the event and this publication. We also appreciate the support of our collaborators; Mass Rapid Transit Corporation Sdn. Bhd. (MRT Corp), Universitas Labuhanbatu, Indonesia (ULB), Universitas Riau Kepulauan, Indonesia (UNRIKA) and IEEE Young Professionals Malaysia, whose contributions have been instrumental in making this event and publication possible.

We hope that this e-proceedings book will serve as a valuable reference for researchers, educators, and practitioners, inspiring further studies and collaborations in both innovation and entrepreneurship. May the knowledge shared here continue to spark new ideas and market-ready solutions, advancing our collective expertise and fostering the growth of entrepreneurial ventures.

B-SS136: EMPOWERMENT OF SMALL AND MEDIUM ENTERPRISES (SMES) IN SHRIMP FARMING IN BARELANG, GALANG ISLAND, BATAM THROUGH MARKETING DIGITALIZATION: BUILDING SUSTAINABLE COMPETITIVENESS	790
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B-SS136: EMPOWERMENT OF SMALL AND MEDIUM ENTERPRISES (SMES) IN SHRIMP FARMING IN BARELANG, GALANG ISLAND, BATAM THROUGH MARKETING DIGITALIZATION: BUILDING SUSTAINABLE COMPETITIVENESS

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ABSTRACT

This research examines efforts to empower SMEs in a shrimp farm in Barelang, Galang Island, Batam, through marketing digitalization. The program aims to address major challenges such as limited market access and the lack of a strong brand identity. By implementing a technology-based digital marketing strategy, SMEs, which have been established since 2022, can improve their competitiveness, expand their market reach, and increase revenue. This program includes training on branding, creating digital content, utilizing social media, managing marketplaces, and performance evaluation. In addition to directly benefiting the shrimp farm SMEs, this initiative also offers a replicable empowerment model for other sectors. Overall, the results of this study show that digital marketing not only improves the performance of shrimp farm SMEs in Barelang but also has a positive impact on the local economy. By strengthening the competitiveness of SMEs through digitalization, it is expected to create new jobs and improve the welfare of the community. This study recommends continuing to develop empowerment programs focused on digitalization as a strategic step to face the challenges of the digital era.

Keywords: Digital Marketing, Shrimp Farming SMEs, SME Empowerment, Sustainability, Barelang

1. Product Description

Shrimp farming SMEs in Barelang, Galang Island, are one of the economic sectors with significant potential to increase local income. Through digital platforms, these SMEs can promote their products more widely and effectively. This program is designed to provide digital marketing training tailored to the needs of shrimp farming SMEs. The training materials cover how to build a brand, create engaging content, manage digital platforms, and optimize the use of evaluation tools to improve marketing effectiveness. With this approach, SMEs can leverage modern technology to strengthen local competitiveness and reach a global market. With digitalization, SMEs can also use analytics data to understand consumer behavior and market trends. This allows them to adjust their marketing strategies and the products they offer. For example, by using social media, they can interact directly with consumers, listen to feedback, and make necessary improvements. In general, the

description of shrimp products from SMEs in Barelang not only covers quality and sustainability but also how marketing digitalization can be a major driver in improving competitiveness and market access. By leveraging technology, they can expand market reach and increase revenue.

2. Visual Elements

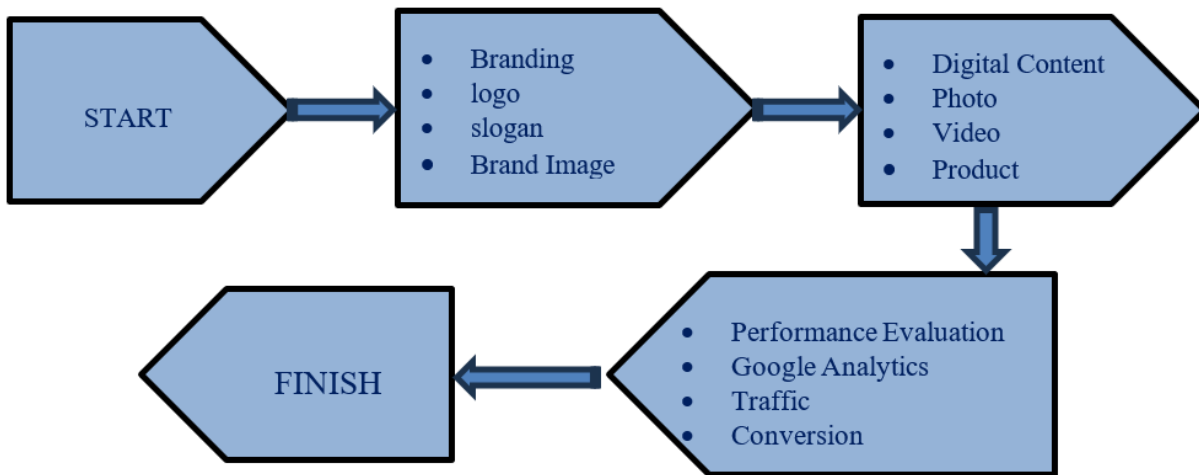


Figure 1: Digital marketing strategy workflow

Figure 1 shows the workflow for implementing the digital marketing strategy. A digital marketing strategy begins with branding, which includes a strong logo, slogan, and brand image to establish identity and recognition. In Phase 2, digital content such as photos, videos, and product descriptions is created to engage the audience and communicate value. Finally, Phase 3 focuses on performance evaluation using Google Analytics to track traffic and conversion rates, ensuring the strategy effectively drives engagement and sales.



Figure 2: Branding Logo and Slogan

Figure 2 illustrates the branding logo with a slogan of "Environmentally Friendly Cultivation Results, Rich In Nutrition And Delicious"



Figure 3.a : Shrimp Farm



Figure 3.b : Shrimp ready for sale



Figure 3.c : CSR activities to the Society



Figure 3.d : shrimp loading activities.

Figure 3.a - 3.d: Shrimp Farm Location and Business Activities

The figures illustrate various aspects of the shrimp farming process and its community engagement. **Figure 3.a** showcases a shrimp farm, highlighting the environment where shrimp are cultivated. **Figure 3.b** displays shrimp ready for sale, indicating the final product prepared for distribution. **Figure 3.c** depicts CSR activities benefiting society, emphasizing the farm's commitment to social responsibility. Lastly, **Figure 3.d** captures shrimp loading activities, showcasing the logistics involved in transporting shrimp to the market.

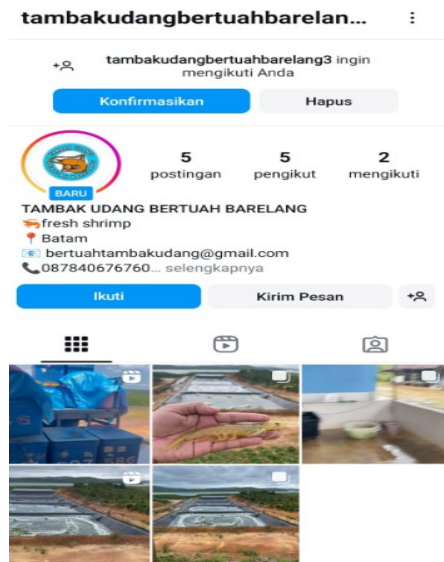
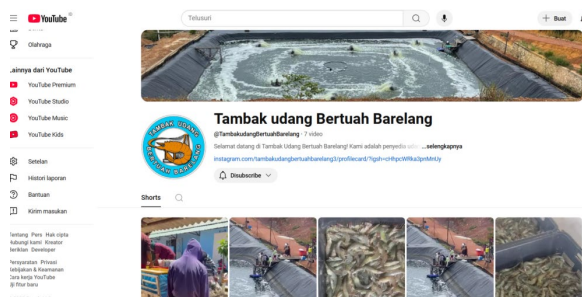


Figure 4.a: Digital Marketing on Instagram



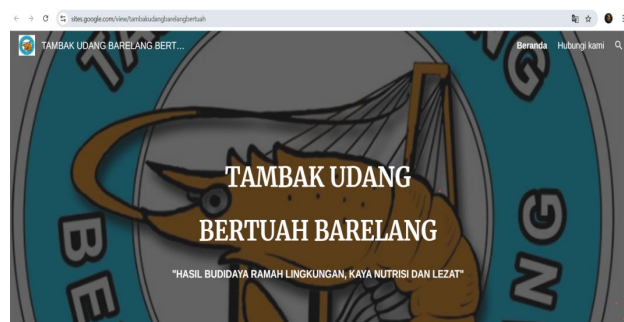
<https://www.facebook.com/share/iqKYH1JtJu6A3y9w/>

Figure 4.b : Digital Marketing on Facebook



<https://youtube.com/@tambakudangbertuahbarelang?si=XXWSNYPkmDEDS8nu>

Figure 4.c : Digital Marketing on YouTube



<https://sites.google.com/view/tambakudangbarelangbertuah>

Figure 4.d: Digital Marketing on Official Website

Figure 4.a-4.d: Digital Platforms: Social Media: Instagram & Facebook

Figure 4.a - 4.d show the screenshot of digital platforms used to market the product. These platforms play a crucial role in promoting the product to a wider audience. **Figure 4.a** highlights digital marketing efforts on Instagram, where visually appealing posts and interactive stories engage potential customers. **Figure 4.b** showcases Facebook marketing, which includes product updates, customer interactions, and targeted advertisements. **Figure 4.c** presents YouTube marketing strategies, featuring video content such as tutorials, testimonials, and promotional clips to enhance brand awareness. Lastly, **Figure 4.d** illustrates the official website, serving as a central hub for product information, direct purchases, and customer support.

Evaluation : Google Analytic.

Here is the Google Analytics Result after implementing digital marketing strategy.

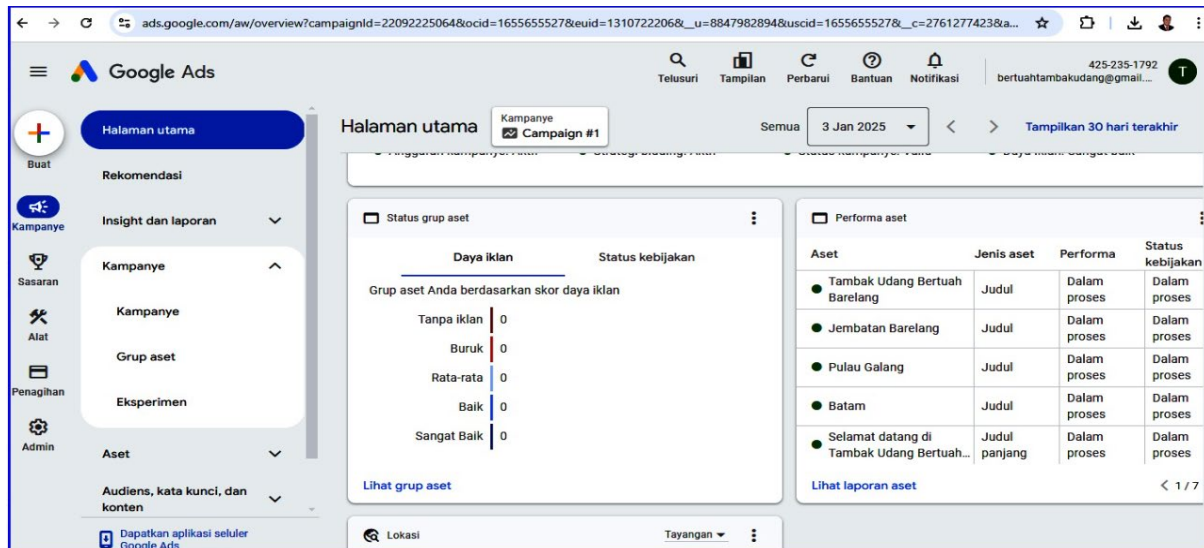


Figure 5 : Google Analytic.

Figure 5 shows the Google Analytics Result after implementing digital marketing strategy. highlighting key performance metrics such as website traffic, user engagement, and conversion rates.

Table 1 :Performance Comparison: Before Vs. After digitization

Metrics	Before digitization	After digitization
Monthly income (IDR)	330,000,000	462,000,000
Customer Reach (People)	100	500
Engagement Rate (%)	20%	60%
Sales Conversion (%)	10%	40%

Table 1 presents a performance comparison before and after digitization, demonstrating significant improvements across key metrics. Monthly income increased from IDR 330,000,000 to IDR 462,000,000, reflecting higher sales. Customer reach expanded from 100 to 500 people, indicating a broader audience engagement. The engagement rate also tripled, rising from 20% to 60%, while the sales conversion rate improved from 10% to 40%, showcasing the effectiveness of digital marketing in driving customer interactions and boosting revenue.

3. Novelty and Uniqueness

This program uniquely combines local cultural elements in branding with modern digital marketing technology. This approach allows shrimp farming SMEs to create a distinct brand identity that attracts both local and global customers, as well as build sustainable competitiveness. By combining a Malay-characterized brand and the iconic Barelang bridge logo, it becomes a unique feature of these SMEs, enhancing their brand image while attracting customers to visit the shrimp farm in Galang Island and enjoy the surrounding natural beauty.

4. Benefits for the Community

This program encourages the economic empowerment of rural communities. In addition to increasing income, this initiative also introduces digital literacy and environmentally friendly practices, creating a sustainable development model that can be adopted in various regions. Marketing digitalization provides broader access to information for consumers. People can now easily obtain information about the products they buy, including the origins and cultivation processes. This raises consumer awareness of the importance of choosing high-quality and sustainable products.

5. Innovation and Entrepreneurship Impact

Entrepreneurship in the shrimp farming sector not only increases individual income but also brings positive effects to the surrounding community. It creates new jobs, reduces unemployment in Barelang, and includes CSR programs provided by SMEs to the local community. Additionally, the entrepreneurship training provided has improved the skills of the community in managing their businesses more professionally. The use of digital tools helps shrimp farming SMEs increase their marketing efficiency. This drives the transformation from traditional methods to modern approaches, creating a culture of innovation and entrepreneurship in the Barelang community.

6. Commercialization Potential

The empowerment of shrimp farming SMEs in Barelang, Galang Island, has significant commercialization potential, especially through marketing digitalization. By utilizing digital platforms, SMEs can reach a wider market, increase product visibility, and accelerate transaction processes. Commercialization potential includes consulting, franchising, and ongoing training. Overall, the commercialization potential of shrimp products from SMEs in Barelang is very large, especially with the support of marketing digitalization and appropriate marketing strategies. By taking advantage of this opportunity, SMEs can increase their revenue and contribute to local economic growth.

7. Acknowledgment

We would like to thank all parties who have contributed to this program, especially the shrimp farming SMEs in Galang Island, Batam, who have shared their experiences and knowledge. We also thank the University of Riau Islands and Mr. Magneta Hisyam, S.E., M.M., who provided support and guidance in this program. We hope this program will benefit the

development of SMEs, especially in the shrimp farming sector, and serve as a reference for future program development. We hope that the empowerment of SMEs through digital marketing will continue and have a positive impact on the community and environment.

8. Authors' Biography



Cucu Eva Lestari is a Management student at the Faculty of Economics and Business, She has 7 (seven) years of working experience as Senior Executive of Finance and Accounting, 10 (ten) years as Senior Executive of Human Resources at PT Amtek Engineering Batam, and 4 (four) years as Internal Auditor at PT. TDK Electronics Indonesia. She continued her education at University of Riau Islands, majoring in management which is relevant to her background to further expand her positive contribution to the development of organizations and society.



Lexsi Maukar started his career from 2000 to 2019, as Marketing Manager till a Director at PT. Sumber Laut Abadi and in 2019 and he decided to resign from the company and started opening his own business, PT. Berkat Samudera Sukses which is engaged in marketing seafood and sheltering seafood. In 2021 He opened a subsidiary of the previous company, namely PT. Berkat Samudera Abadi which is engaged in vaname shrimp farming. In 2024 He developed a business engaged in shipyard, namely PT. Limbros Mitra Bahari. Currently he is continuing his studies at University of Riau Islands, majoring in management, with the aim of exploring the skills or abilities and insight in managing his company.



Hermansyah is a business man with over 20 years experiences in tour and travel industry. He has a proven track record of success in hospitality and marketing with some achievement in umra and hajj award. As Director of some companies such as PT. Travelataya Mandiri Utama, the tour and travel umra and hajj, PT. Herve Beauty Indonesia with skincare and parfum products, PT. Tiga Bersaudara Albanjaru for Foreign Exchange and Land Agreement. Currently he is continuing his studies at University of Riau Islands majoring in management to improve his capability of management and marketing for scale up his business unit in the future.



Magneta Hisyam is a lecturer at the Faculty of Economics and Business, Universitas Riau Kepulauan. He completed his Diploma in Agribusiness at Universitas Jenderal Soedirman in 2009. He earned his Bachelor of Economics degree in Management from Universitas Riau Kepulauan in 2012 and his Master's degree in Management from Universitas Dr. Soetomo in 2016. Currently, he is pursuing a Doctoral Program (Ph.D.). In addition to teaching, he serves as the Head of the Computer Center (KA. Puskom) at Universitas Riau Kepulauan. His research and community service activities focus on marketing management, digital economy, and computer technology. His active involvement in the Tri Dharma of Higher Education reflects his dedication to advancing knowledge and contributing to society.