EXPLORING THE DIGITAL MARKETING POTENTIAL AND NEEDS FOR DIGITAL MARKETING CAPABILITIES OF SERVICE SECTOR MSMES IN THAILAND

Nachayapat CUIJTEN [1], Sukontip WONGPUN [1], Nathamon BUAPROMMEE [2], Rungsan SUWANNAHONG [1], Sureerut INMOR [1]✉

[1]Information Systems Department, Faculty of Business Administration, Rajamangala University of Technology Thanyaburi, Pathum Thani 12110, Thailand
[2]Marketing Department, Faculty of Business Administration, Rajamangala University of Technology Thanyaburi, Pathum Thani 12110, Thailand

Abstract. The research objectives are to assess the digital marketing capabilities of micro, small, and medium-sized enterprises (MSMEs) in Thailand's service sector, as well as to develop persona profiles for each enterprise size. The survey of 400 digital marketing personnel was conducted alongside comprehensive interviews with 10 marketing executives. The result suggests that MSMEs have moderate digital marketing skills but need to improve their knowledge in creative thinking, online consumer interaction, affiliate marketing, and change management. An executive interview emphasized issues unique to micro-enterprises, like mismatched advertising and inadequate online marketing expertise. Medium-sized enterprises have difficulties achieving online target engagement due to their inadequate SEO capabilities, whereas small enterprises struggle to effectively manage customer inquiries. The study introduces persona cards that reveal distinct competency levels and areas for improvement for each enterprise size. The research provides actionable insights for MSMEs seeking to refine their digital marketing strategies and contributes to the academic literature with understanding. Persona cards serve as a novel tool for visualizing digital marketing competencies and needs within the MSME sector.

1. Introduction

In 2020, the Office of Small and Medium Enterprises Promotion surveyed how disruptive technology changes are affecting MSMEs' marketing and consumer behaviour. The findings indicate that many MSMEs are experiencing decreased foot traffic in physical stores, yet most lack plans to adapt to these technological shifts. Only a small percentage have embraced new digital technologies and added online sales channels to their businesses (Office of Small and Medium Enterprise Promotion, 2020). Hence, SMEs must embrace digital marketing to stay competitive. It leverages technology for faster consumer outreach and enables businesses to swiftly assess marketing efforts through analytical tools. The four main objectives of digital

marketing are to increase online visibility, generate leads and conversions, enhance customer engagement, and increase sales and revenue. The main reason why there is a need to adjust the format of marketing is because of changes in consumer behavior (Alexander, 2016).

To address micro-enterprises challenges in adapting to the digital economy and enhance entrepreneurs' competitiveness, the research team proposed a project to develop their potential in digital marketing. Focused on Pathum Thani Province due to its economic growth and rising number of entrepreneurs in the metropolitan area. In this year 2020, there were 54,233 MSMEs and in 2021, the number increased to 55,639, which is consistent with the increased employment rate (Office of Small and Medium Enterprise Promotion, 2020). The researcher selected a group of areas in Pathum Thani Province with the number of SMEs entrepreneurs in 2021 amounting to 55,639 businesses. In this research, the research team will focus on the group in the service sector, which is the economic group with the highest growth. Especially the service business characteristics of SMEs that can compete in the current market or will become internationalization.

The utilization of personas in the realm of digital marketing enables the adoption of a customer-centric approach, thereby aiding businesses in the development of marketing campaigns, content, products, and services that effectively resonate with their intended target audience (Camilleri, 2020; Terho et al., 2022). Through acquiring a comprehensive and intricate comprehension of their personas, businesses are able to enhance the user experience, elevate customer engagement, and ultimately stimulate conversions and foster loyalty (Jansen et al., 2020; Märtin et al., 2023).

The concept of personas is widely recognized and employed as a strategic tool in the realm of digital marketing within academic and professional literature. For instance, in the domain of product design, Devitt (2021) and Siricharoen (2021) introduced and subsequently adapted and implemented the concept, which has been useful in developing targeted and effective marketing strategies. Moreover, Ten Klooster et al. (2022) and Graham et al. (2021) further expounded on the utilization of personas in the process of user-cantered design, emphasizing their importance in comprehending user needs and behaviours, a principle that is directly applicable to the practices of digital marketing.

 The consequences and practical applications of the discoveries might possibly lead to the establishment of targeted training programs in digital marketing for MSMEs focused on enhancing proficiency in change management and affiliate marketing. Advocating for MSMEs to invest in digital marketing tools that enable enhanced online customer engagement and customization. Utilizing persona cards to pinpoint competency gaps and strengths in digital marketing, thereby assisting MSMEs in honing their strategies for improved market alignment. Underscoring the significance of continuous learning to stay abreast of digital trends and consumer preferences, thereby ensuring MSMEs retain their competitive edge. Despite the research being focused on Pathum Thani, the issues and opportunities identified could be relevant for MSMEs in other developing economies facing comparable market dynamics and technological adoption levels.

Based on the research study, research question could be formulated as: "What is the current level of digital marketing knowledge and skills among micro, small, and medium-sized enterprises (SMEs) in the service sector in Pathum Thani province, Thailand, and how can personas be developed to represent the digital marketing capabilities of each enterprise size?".

Therefore, the research goal is based on the following objectives: 1) To investigate the potential level of knowledge and skills of digital marketing capability of micro, small, and medium-sized (SMEs) for the service business sector in Pathum Thani province, Thailand, and 2) To develop a persona of the digital marketing capabilities of each sized enterprise.

This research article is organized as follows: Section 2 reviews relevant literature; Section 3 describes the research methodology; Section 4 discusses results and findings; Section 5 presents conclusions and recommendations for further research; and Section 6 concludes with the essential contribution section.

2. Literature review

2.1. Concepts about micro, small and medium-sized enterprises (MSMEs)

Definition of the term micro, small, and medium enterprises (Micro-entrepreneurs, Small and Medium-sized Enterprises, MSMEs) has been established in accordance with the announcement of ministerial regulations. Determination of characteristics of small and medium-sized enterprises in 2019, considering by reference to income and number of employees, determined to have 3 sizes: micro, small, and medium (The Office of SMEs Promotion, 2021).

This research focuses on the service business sector, which includes education, health, entertainment, transportation, hotels, dormitories, restaurants, recreation rental services, personal services, household services, all types of repair businesses, and tourism-related businesses. The following criteria determine the size of the business: The medium-sized business has less than 100 employees and an income of less than 300 million baht. Small-sized: number of employees less than 30 people or income less than 50 million baht; and micro-sized: number of employees less than 5 people or income less than 1.8 million baht (The Office of SMEs Promotion, 2021).

2.2. Digital marketing concepts

Digital marketing refers to the practice of promoting products, services, and brands through various digital channels such as search engines, websites, social media, email, and mobile apps (Alghizzawi et al., 2024; Melović et al., 2020). Its main aim is to interact with customers in the digital sphere, where they spend much of their time. Key strategies include SEO, PPC advertising, content marketing, and social media interaction, all supported by analytics to gauge marketing effectiveness (Kingsnorth, 2022; Polanco-Diges & Debasa, 2020). This approach enables personalized and direct communication, real-time engagement, and efficient global reach to a wide audience (Behera et al., 2020; Djakasaputra et al., 2021). Essentially, digital marketing signifies a paradigm shift from traditional marketing, placing emphasis on interactive and integrated experiences through digital channels (Peter & Dalla Vecchia, 2021). It is propelled by the convergence of marketing and technology, often referred to as MarTech, and continuously evolves alongside the emergence of new technologies, platforms, and consumer behaviours (Grewal et al., 2020; Wirtz & Lovelock, 2021).

Egbu and Azih (2023) stressed the importance of e-marketing skills for SME startup operators in Ebonyi State, finding a significant need for such skills, especially influenced by gender differences. They recommended e-marketing training to bridge the gap between traditional and digital marketing strategies, crucial for SMEs' competitiveness. This initiative, in partnership with Lazismu in Medan City, aimed to address the digital marketing challenges faced by MSMEs post-COVID-19. Through interactive sessions on topics like social media marketing and search engine optimization, the training catered to 30 MSMEs in Medan City. Evaluations via questionnaires indicated increased digital marketing proficiency among participants, leading to broader market reach and higher sales. The project highlights the importance of digital marketing training in boosting MSMEs' competitiveness in the digital era (Afandi et al., 2023).

Rangaswamy et al. (2020) analysed digital business platforms like eBay, Google, and Uber Technologies, emphasizing the importance of enhancing interactions and managing transaction costs for their success. They suggest that coordinating interactions among users can effectively utilize these platforms as marketing tools for service businesses in the future. Sharma et al. (2020) studied small travel agencies' readiness for digital marketing. They found that while digital marketing can attract and serve travellers, its development in tourism businesses is slow in developing countries. Qualitative research revealed that while the digital platform is popular among travel agents, certain factors still hinder its widespread use, which needs addressing for further development.

Hasanat et al. (2020) studied identifying skill gaps among digital marketers in digital business development, aiming to formulate a model for enhancing digital marketers' capabilities in Malaysian retail businesses. Findings reveal deficiencies in various areas, including creating customer engagement and utilizing digital marketing technology effectively. These skill gaps hinder the transformation of Malaysian retail businesses into digital enterprises, impacting their global competitiveness. Urgent and efficient strategies are required to address these skill deficiencies among digital marketers.

Kovács (2021) investigated undergraduate students' perceptions and digital marketing skills for employment. It highlighted the importance of marketing technology and soft skills for transitioning into digital marketing roles. Soft skills can be developed through consistent online study. Additionally, the research surveyed online digital marketing soft skills courses on the Massive Open Online Courses (MOOCs) platform. The course content was based on a survey of marketing professionals' skill needs. Essential skills for employment include soft skills like teamwork and communication, digital skills such as social media and e-commerce knowledge, core marketing skills, analytical skills like data analysis, and customer insights skills. Research revealed that students didn't recognize the value of online learning for developing soft skills and didn't regularly attend online classes.

In conclusion, the importance of digital marketing skills is unequivocal in ensuring the competitiveness and sustainability of businesses in the digital era. The collective evidence from various studies advocates for comprehensive digital marketing training and skill development initiatives to equip businesses and future marketers with the tools necessary to navigate and thrive in the digital marketplace.

2.3. Personas in digital marketing concepts

This summary presents a comprehensive literature review on consumer perceptions of digital brand personality. Despite scattered research across digital contexts, the review analyses 107 peer-reviewed articles from 2005 to 2021 using the TCCM framework. Through content analysis, it consolidates findings and proposes a novel conceptual framework. Future areas for development include expanding theoretical foundations, exploring new digital touchpoints and technologies, resolving inconsistencies in dimensions and consequences, and adopting diverse research methodologies. It establishes an extensive research agenda aimed at deepening our understanding of consumers' perceptions of digital brand personality, with the objective of unifying and advancing this field of study (Ghorbani et al., 2022).

Jansen et al. (2020) emphasize the use of personas in enhancing stakeholder awareness across domains like e-commerce, healthcare, and marketing. They introduce a framework that integrates personas with analytics to improve decision-making. The study demonstrates the practical utility of data-driven personas in digital marketing scenarios and proposes a

system that offers stakeholders various tools for decision-making by leveraging data aggregation.

Dion and Arnould (2016) investigated the application of the persona concept in brand personification within the gastronomy industry. Through professional interviews, it explores the traits of the chef persona and its impact on restaurant management strategies. Distinguishing between personified brands and other human brands, the study provides a detailed examination of the chef persona. It proposes two approaches to brand management via persona: distributed/fragmented, with different individuals representing various aspects, and unified, with a single individual embodying all aspects. Our findings align with the emerging trend of performative perspectives in marketing research.

The analysis in this paper delves into the historical unease within the marketing field about its portrayal and the ethical implications of emphasizing superficiality over authenticity, prompting questions about the consequences on both the discipline itself and its societal reception. The chosen research methodology entails a meticulous analysis of Jung's writings on persona, as well as an in-depth review of marketing practices and academic literature concerning persona development. This investigation sheds light on the conflict between marketing's own identity and the personas it constructs, prompting reflections on the ethical and scientific dilemmas faced by the discipline. The potential significance of this study lies in its ability to prompt a reassessment of marketing techniques towards more ethical and relationship-centred approaches, potentially shaping future marketing strategies and academic investigations. The findings highlight the discomfort within the field of marketing in relation to its societal perception and advocate for a shift towards transparency and the collaborative generation of value Miles (2020).

A lot of MSMEs regularly experience a substantial insufficiency in crucial digital marketing know-how, which inhibits their capacity to forge a solid online presence and communicate effectively with clientele, ultimately disadvantaging them in the progressively digitized market. The financial and human resources of MSMEs are frequently stretched, making it difficult for them to allocate sufficient funds and manpower towards investing in digital marketing tools and education, thereby restricting their adoption of advanced digital marketing strategies and technologies. The service sector is highly competitive, and without effective digital marketing strategies, MSMEs struggle to differentiate themselves. This intense competition underscores the necessity for these enterprises to embrace innovative and impactful marketing strategies to attract the attention of potential clientele. The digital marketing landscape is continuously evolving, with fresh trends and technologies emerging swiftly For MSMEs, keeping pace with these developments may present a difficulty, requiring ongoing education and adjustment, a rate of transformation that frequently impedes their capacity to stay up-to-date and competitive. Every service industry presents its own distinctive array of digital marketing challenges, necessitating customized strategies that cater to the specific requirements and attributes of each sector. Without such customized approaches, MSMEs may face difficulties in effectively navigating and overcoming the specific obstacles they encounter within their respective industries.

3. Research methodology

This study included both quantitative and qualitative research approaches. The study was designed to look at the potential and need for digital marketing capabilities among digital marketing specialists and relevant persons, particularly in MSMEs in service business sectors.

The survey answers were then examined to identify a particularly current competency and the requirements for digital marketing capabilities for each organization size. The next step is to combine the questionnaire answers with the content analysis from the in-depth interview. Finally, we proposed a persona for each firm size to demonstrate the current level of digital marketing skills and the demands of MSMEs in the service industry sector. The findings may be utilized to create an effective, specifically eLearning system, that is tailored to the unique characteristics of each organization, as seen in Figure 1.
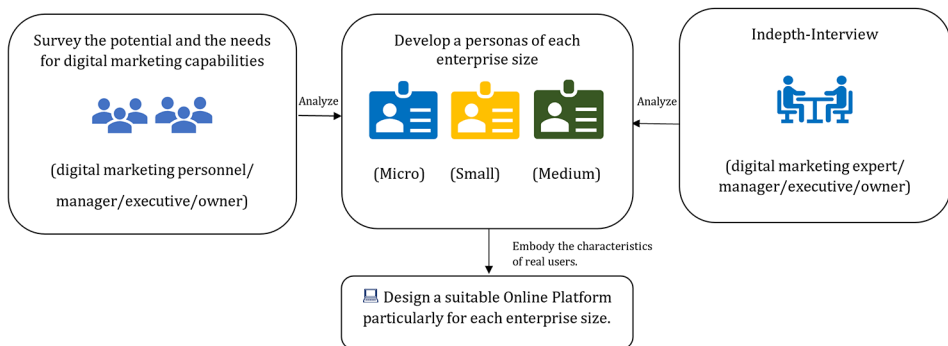

Figure 1. Research methodology

Figure 1 shows the research methodology in three steps as follows.

Step 1: Survey the potential and the needs for digital marketing capabilities.

The first step of this research employed a quantitative survey to investigate the characteristics of MSME entrepreneurs in the service business sectors and assess the potential and need of digital marketing personnel and relevant person for digital marketing competencies. Data collection involved questionnaires administered to the target population. The target population for the questionnaire comprised digital marketing personnel within MSMEs operating in the service business sector.

To estimate the population size, Cochran's method (Israel, 1992) was used with a 95% confidence level and a ±5% margin of error, yielding a target sample size of 385 persons. To account for potential non-response and data collecting issues, 400 questionnaires were sent.

The convenience sampling approach was implemented, which entailed the selection of participants in accordance with specific research criteria. Although we recognized that the sample may not be entirely representative of the entire population, our primary objective was to reduce the impact of sampling bias by including a diverse array of sources from various service firms. The sample includes a diverse range of MSMEs from various service sectors, including education, health, entertainment, transportation, hotels, dormitories, restaurants, recreation rental services, personal services, household services, all types of repair businesses, and tourism-related businesses, which helps in capturing a broad spectrum of digital marketing capabilities within Pathum Thani Province.

The study necessitated that participant be owners, digital marketers, managers, or executives employed in the service sector and enthusiastic about participating.

Data was collected using questionnaires developed after a thorough analysis of relevant ideas, concepts, and prior research. The questionnaire comprised three sections: (1) a checklist of MSME traits in the business services industry; (2) a 5-point Likert scale for self-evaluation

of digital marketing potential; and (3) another 5-point Likert scale to assess actual digital marketing capability needs of MSMEs.

Step 2: In Depth-Interview.

While the survey data highlights gaps in digital marketing capabilities, interviews with business proprietors and marketing experts provide deeper insights into the specific challenges faced, such as limited resources and technical knowledge. The study conducted in-depth interviews with digital marketing specialists and executives from MSMEs in the service sector. Each participant held a position as a digital marketing executive or specialist with at least six months of experience in the field. Purposive sampling was implemented to identify ten critical informants for in-depth interviews. Ten individuals meeting these criteria were recruited for the interviews, where they were asked about digital marketing job characteristics and operational challenges. The data gathered from the in-depth interviews was analysed using content analysis and interpretation support to design the persona integrated with the results from step 1. The comprehensive persona should represent the real situation of the digital marketing capabilities and needs of each MSMEs in the service business sector to embody the real characteristics of digital marketing personnel. The persona was designed should represent the real situation of the digital marketing capabilities and needs of each MSMEs in the service business sector to embody the real characteristics of digital marketing personnel.

Step 3: Analyse the data to develop a persona of each enterprise size.

The thrid step is analyzing the potential and needs for digital marketing competencies of digital marketing personnel and relevant persons. The data was categorized into three enterprises size (Micro, Small, and Enterprise) followed the definition of The Office of SMEs Promotion (2021).

We used the Statistical Package for Social Sciences (SPSS) to evaluate the data that we had gathered. Quantitative data analysis necessitates the following statistics to provide the intended results from the questionnaire, which are: (1) Frequency Distribution: This statistical treatment summarizes key factors and describes the features of the SMEs in the sample by clearly showing the distribution of individual items. (2) Mean Rating: These tests calculate the average answer for each survey question. This step reveals the data's tendency, thereby guiding the understanding of SMEs' digital marketing capabilities and needs in each enterprise size. 3) T-test: This method compares the means of two independent groups (Digital Marketing Capabilities vs. Digital Marketing Needs), each consisting of core, technical, and behavioral competencies specific to each enterprise size. The t-test is a statistical method for assessing whether there are significant differences between the means of two groups, which is critical for testing hypotheses about group differences.

4. Results and discussion

This study focuses on MSMEs in Pathum Thani Province, using a sample size of 400 businesses and 10 interviews. While this provides valuable insights, the findings may not be fully representative of all MSMEs in Thailand.

4.1. Measurement tool

We had three experts evaluate the draft questionnaire to assess its validity using the index of item objective congruence (IOC). Each question's accuracy ranged from 0.67 to 1.0, meeting the standards consistently. Additionally, we conducted a try-out with 30 entrepreneurs not

part of the study population to determine the questionnaire's reliability using Cronbach's alpha coefficient. The confidence value exceeded 0.80, surpassing the threshold, and indicating the questionnaire's data reliability. Therefore, the questionnaire collection meets the necessary standards, as shown in Table 1.

Table 1. Shows the alpha coefficient of the questionnaire

Questions	Alpha Coefficient
Digital marketing competencies Level	
– Core Competencies	0.93
– Technical Competencies	0.86
– Behavioural Competencies	0.97
Digital marketing Competencies needs	
– Core Competencies	0.92
– Technical Competencies	0.87
– Behavioural Competencies	0.95

4.2. Results of step 1: survey the potential and the needs for digital marketing capabilities.

The results of characteristics of MSMEs in service business groups.

Results of the analysis of general characteristics of MSMEs for service business groups include period of business operation, and operational level in each enterprise sized. Using descriptive statistics such as frequency, percentage for the number of 400 cases, as shown in Table 2.

Table 2. Compare the characteristics of MSMEs in each enterprise sized

Characteristic	MSMEs Type							
	Micro		Small		Medium		Total	
	N	%	N	%	N	%	N	%
Length of business operation								
Less than 1 year	50	12.50%	8	2.00%	5	1.25%	63	15.75%
From 1–5 years	57	14.25%	103	25.75%	12	3.00%	172	43.00%
From 6–10 years	12	3.00%	36	9.00%	48	12.00%	96	24.00%
More than 10 years	3	0.75%	16	4.00%	50	12.50%	69	17.25%
Total	122	30.50%	163	40.75%	115	28.75%	400	100.00%
Position Level								
Digital Marketing Personnel	81	20.25%	114	28.50%	64	16.00%	259	64.75%
Junior level executives	14	3.50%	37	9.25%	37	9.25%	88	22.00%
Middle management	27	6.75%	12	3.00%	14	3.50%	53	13.25%
Total	122	30.50%	163	40.75%	115	28.75%	400	100.00%

Table 2 provides an overview categorized by the length of business operation and the level of performance across Micro, Small, and Medium Enterprises (MSMEs) in service business sectors. In the 1–5 years of operation category, small enterprises lead at 25.75%, followed by micro and medium enterprises at 14.25% and 3.00%, respectively, totalling 43.00%. For businesses operating less than 1-year, micro-enterprises dominate with 12.50%, followed by small (2.00%) and medium (1.25%) enterprises, accounting for 15.75%. In the 6–10 years category, medium enterprises have a stronger presence at 12.00%, surpassing micro (3.00%) and small (9.00%) enterprises, totalling 24.00%. In the long-term category (more than 10 years), medium enterprises lead at 12.50%, with small and micro enterprises at 4.00% and 0.75%, respectively, comprising 17.25%. Regarding the level of performance, digital marketing personnel are predominant, especially in small enterprises (28.50%), followed by micro (20.25%) and medium (16.00%) enterprises, totalling 64.75%. Junior-level executives are represented, with small and medium enterprises each accounting for 9.25%, and micro enterprises at 3.50%,

Table 3. Compare the Core competency in digital marketing of MSMEs in each enterprise sized

Core competency in digital marketing	Digital Marketing Capabilities	Digital Marketing Needs	t	p-value
Marketing Strategy Planning				
Micro	2.97	2.78	2.616	0.010*
Small	3.16	3.07	1.455	0.148
Medium	3.50	3.69	−2.239	0.027*
Average	3.21	3.18	1.017	0.309
Personalize and Targeting				
Micro	3.22	2.98	3.009	0.003*
Small	3.47	3.36	1.318	0.189
Medium	3.78	3.88	−1.074	0.285
Average	3.49	3.41	1.822	0.069
Content Creation				
Micro	3.07	2.90	2.114	0.036*
Small	3.26	3.21	0.657	0.512
Medium	3.63	3.69	−0.598	0.551
Average	3.32	3.27	1.203	0.230
Brand Building and Public Relations				
Micro	3.32	3.05	3.221	0.001*
Small	3.39	3.28	1.416	0.159
Medium	3.63	3.77	−1.357	0.177
Average	3.44	3.37	1.708	0.088
Customer Relationship Management				
Micro	3.10	2.91	2.306	0.022*
Small	3.37	3.26	1.410	0.161
Medium	3.70	3.71	−0.095	0.092
Average	3.39	3.29	2.071	0.039*

totalling 22.00%. Micro enterprises have the highest percentage of middle management at 6.75%, followed by small (3.00%) and medium (3.50%) enterprises, totalling 13.25%.

The results of digital marketing capabilities and needs of SMEs in service business groups.

This section compares the core competencies, technical competencies, and behavioural competencies in digital marketing across Micro, Small, and Medium Enterprises (MSMEs) in service business sector, focusing on digital marketing capabilities versus digital marketing needs. The data is analysed using t-tests, with significant differences highlighted by p-values, as shown from Table 3 to Table 5.

Table 3 compares core competencies across different enterprise sizes. Micro enterprises exhibit significant differences between capabilities (2.97) and needs (2.78) in marketing strategy planning (p = 0.05*), indicating an area for improvement. Small enterprises show alignment between capabilities (3.16) and needs (3.07) in this area (p = 0.148), while medium

Table 4. Compare the technical competency in digital marketing of MSMEs in each enterprise sized

Technical competency in digital marketing	Digital Marketing Capabilities	Digital Marketing Needs	t	p-value
E-mail Marketing				
Micro	2.43	2.34	2.025	0.045*
Small	2.86	2.91	−0.815	0.415
Medium	3.61	3.49	1.500	0.136
Average	2.95	2.90	1.214	0.225
Video Marketing				
Micro	2.93	2.73	2.651	0.009*
Small	3.28	3.18	1.560	0.120
Medium	3.70	3.64	0.617	0.538
Average	3.29	3.18	2.742	0.006*
Social Media Marketing				
Micro	3.28	2.83	5.365	0.000*
Small	3.41	3.28	1.772	0.078
Medium	3.77	3.57	2.159	0.032*
Average	3.48	3.23	5.143	0.000*
Mobile Marketing				
Micro	3.31	2.93	4.136	0.000*
Small	3.42	3.35	1.061	0.290
Medium	3.79	3.58	2.332	0.021*
Average	3.50	3.29	4.309	0.000*
Search Engine Organization				
Micro	2.86	2.67	2.217	0.028*
Small	3.33	3.28	0.605	0.545
Medium	3.71	3.52	2.001	0.047*
Average	1.214	1.214	2.733	0.007*

enterprises demonstrate no significant difference between capabilities (3.50) and needs (3.69) (p = 0.05*). For Personalize and Targeting competency, micro-enterprises have significant differences between capabilities (3.22) and needs (2.98) (p = 0.003*), whereas small and medium enterprises show alignment (p = 0.189 for small, p = 0.285 for medium). Micro enterprises exhibit significant differences in content creation competency (capabilities: 3.07, needs: 2.90) (p = 0.036*), while small and medium enterprises are balanced (p = 0.512 for small, p = 0.551 for medium). For brand building and public relations, micro-enterprises show a significant difference (capabilities: 3.32, needs: 3.05) (p = 0.001*), while small and medium enterprises exhibit alignment (p = 0.159 for small, p = 0.177 for medium). In customer relationship management competency, micro-enterprises have a significant difference (capabilities: 3.10, needs: 2.91) (p = 0.022*), while small and medium enterprises are aligned (p = 0.161 for small, p = 0.924 for medium). Across all sizes, there's a significant difference indicating that, on average, capabilities slightly lag needs in CRM (p = 0.039*).

Table 4 compares technical competency in digital marketing across Micro, Small, and Medium-sized Enterprises (MSMEs). Micro enterprises exhibit lower average scores in e-mail marketing (capability: 2.43; need: 2.34) and video marketing (capability: 2.93; need: 2.73) compared to small and medium-sized enterprises. Significant differences exist in capabilities for e-mail marketing (micro vs. others) and video marketing (micro vs. others). Additionally, microenterprises show lower capabilities and higher needs in social media marketing (capability: 3.28; need: 2.83) and mobile marketing (capability: 3.31; need: 2.93) compared to other sizes. Statistically significant differences exist in capabilities and needs for social media and mobile marketing between micro and medium-sized enterprises, as well as between micro and small enterprises. Microenterprises also exhibit lower capabilities and needs in search engine organization (capability: 2.86; need: 2.67) compared to other sizes, with a significant difference in capabilities between micro and small enterprises.

Overall, microenterprises display lower technical competency in digital marketing across all areas and higher digital marketing needs, particularly in social media marketing, mobile marketing, and search engine organization.

Table 5 compares behavioural competency in digital marketing across micro, small, and medium-sized enterprises (MSMEs). Micro enterprises demonstrate moderate capability in creative thinking (3.00), slightly lower than small (3.31) and medium-sized enterprises (3.69). All sizes need improvement in creative thinking, with micro enterprises indicating the lowest average need score (2.82).

Communication and presentation of marketing content are comparable across all sizes, with mean scores ranging from 3.12 to 3.74, indicating a universal need for improvement (average need ranging from 3.07 to 3.87). Micro enterprises exhibit moderate capability in online customer interaction (3.27), slightly lower than small (3.44) and medium-sized enterprises (3.77). However, there's a significant need for improvement across all sizes, with micro-enterprises indicating the lowest average need score (3.15). For affiliate marketing, micro-enterprises demonstrate moderate capability (3.11), similar to small (3.42) and medium-sized enterprises (3.75). However, there's a notable need for improvement across all sizes, with micro-enterprises indicating the lowest average need score (2.91). Micro, small, and medium-sized enterprises show moderate capability in change management, with mean scores ranging from 3.09 to 3.72. However, there's a significant need for improvement across all sizes, with micro-enterprises indicating the lowest average need score (2.99).

Table 5. Compare the behavioural competency in digital marketing of MSMEs in each enterprise sized

Behavioural competency in digital marketing	Digital Marketing Capabilities	Digital Marketing Needs	t	p-value
Creative Thinking				
Micro	3.00	2.82	2.259	0.025*
Small	3.31	3.26	0.674	0.500
Medium	3.69	3.82	−1.679	0.095
Average	3.32	3.29	0.839	0.401
Communication and Presentation of Marketing Content				
Micro	3.12	3.07	0.688	0.492
Small	3.44	3.45	−0.185	0.853
Medium	3.74	3.87	−1.771	0.079
Average	3.43	3.46	−0.584	0.559
Interaction with Customer Online				
Micro	3.27	3.15	1.485	0.140
Small	3.44	3.56	−1.742	0.083
Medium	3.77	3.95	−2.405	0.017*
Average	3.48	3.55	−1.450	0.147
Affiliate Marketing				
Micro	3.11	2.91	2.273	0.024*
Small	3.42	3.52	−1.318	0.189
Medium	3.75	3.95	−2.619	0.009*
Average	3.42	3.46	−0.743	0.457
Change Management				
Micro	3.09	2.99	0.979	0.329
Small	3.34	3.54	−2.974	0.003*
Medium	3.72	3.97	−3.015	0.003*
Average	3.37	3.50	−2.590	0.009*

The overview provides a comparison of core competencies, technical competencies, and behavioural competencies in digital marketing across Micro, Small, and Medium-sized Enterprises (MSMEs). Figures 2–4 depict the mean values of digital marketing capabilities versus needs. In Figure 2, data analysis of digital marketing competencies and needs among micro-enterprises reveals notable competency in brand building and public relations (3.32 out of 5). Micro enterprises also excel in mobile marketing (3.31 out of 5) and social media marketing (3.28 out of 5).

For the needs of digital marketing, email marketing demonstrating moderate competency in various areas, micro enterprises express a significant need for improvement in email marketing, with a score of 2.43 out of 5. Followed by the micro enterprises also indicate a notable need for enhancement in video marketing, scoring 2.93 out of 5. Another area where micro enterprises require improvement is search engine optimization, with a capability score of 2.86 out of 5 respectively.
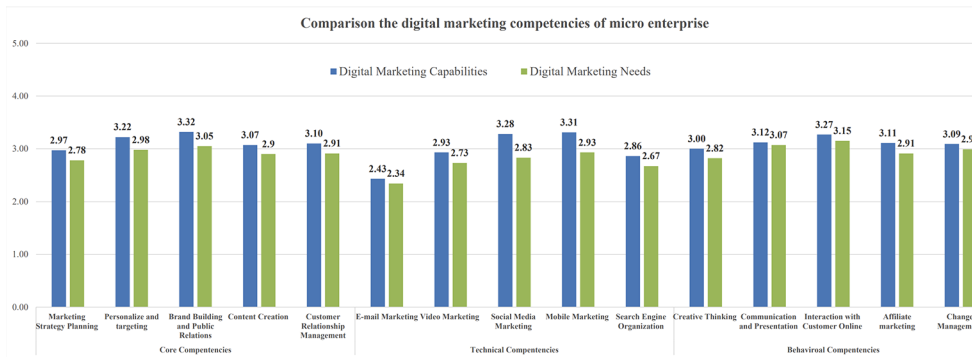
Figure 2. Comparison the digital marketing competencies of micro enterprise in service business sector
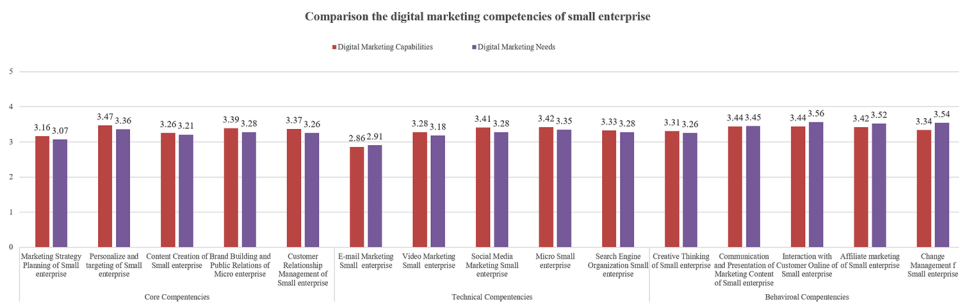

Figure 3. Comparison of the digital marketing competencies of small enterprises in the service business sector
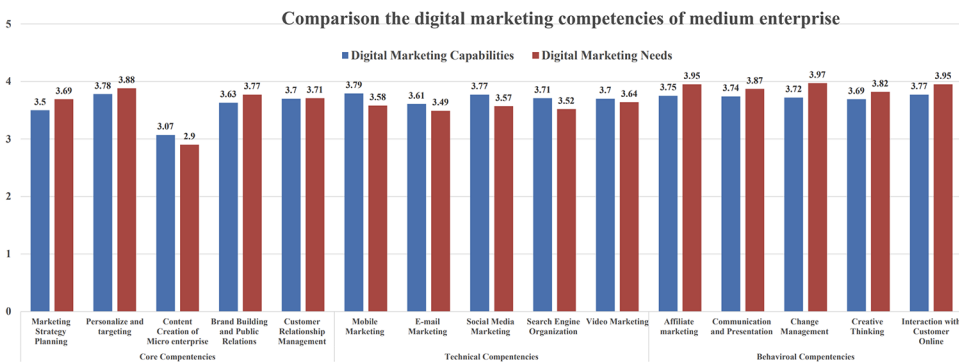

Figure 4. Comparison of the digital marketing competencies of medium enterprise in service business sector

Figure 3 offers insights into the digital marketing competencies and needs of small enterprises across various categories. The top three digital marketing capabilities include personalization and targeting (Mean = 3.47), communication and presentation (Mean = 3.44), and interaction with customer online (Mean = 3.44) respectively. These areas represent the

highest digital marketing needs among small enterprises, highlighting a demand for improvement in managing changes related to digital marketing strategies, enhancing online customer interaction, and implementing effective affiliate marketing initiatives. The top three of the needs for digital marketing capabilities include interaction with customer online (Mean = 3.56), change management (Mean = 3.54), and affiliate marketing (Mean = 3.52) respectively.

Figure 4 shows the digital marketing competencies of medium enterprise in service business sector across different competency types: technical competencies, behavioral competencies, and core competencies. Overall, the top three of the needs for digital marketing competencies includes change management (Mean = 3.97), affiliate marketing (Mean = 3.95), Interaction with customer via online (Mean = 3.95) and personalize and targeting (Mean = 3.88) respectively. While the top three digital marketing capabilities includes mobile marketing (Mean = 3.79), personalization and targeted marketing (Mean = 3.78), interaction with customers via online (Mean = 3.77), and social marketing capabilities (Mean = 3.77), respectively.

4.3. Results of step 2: in depth-interview

The study conducted in-depth interviews with digital marketing experts and executives from MSMEs in the service sector. Ten participants, meeting specific criteria, provided insights into digital marketing work characteristics and operational challenges. The data from these interviews underwent content analysis and interpretation, leading to the development of a persona table (Table 6). This table presents nominal categorical variables indicating respondent modes and quantitative variables representing mean values, reflecting both existing proficiency and the need for digital marketing abilities. The average score range of interpretation of the current level of digital marketing capabilities includes: 1) range from 1.00 to 1.80 means very low; 2) range from 1.81 to 2.60 means low; 3) range from 2.61 to 3.40 means moderate; 4) range from 3.41 to 4.20 means high; and 5) range from 4.21 to 5.00 means very high.

While the demands for digital marketing capabilities were reflected if the current level of digital marketing capability and the need for digital marketing capabilities differed at a significant level of 0.5, determined by the P-value from the t-test.

Table 6. Summary of persona table

Details	Persona 1 (Micro, N = 122)	Persona 2 (Small, N = 163)	Persona 3 (Medium, N = 115)
Length of business operation	From 1–5 years	From 1–5 years	More than 10 years
Position Level	Digital Marketing Personnel	Digital Marketing Personnel	Digital Marketing Personnel
Core competencies			
Marketing Strategy Planning	C: Moderate (Mean = 2.97) N: Yes (p-value = 0.010*)	C: Moderate (Mean = 3.16) N: No	C: High (Mean = 3.50) N: Yes (p-value = 0.027*)
Personalize and targeting	C: Moderate (Mean = 3.22) N: Yes (p-value = 0.003*)	C: High (Mean = 3.47) N: No	C: High (Mean = 3.78) N: No

End of Table 6

Details	Persona 1 (Micro, N = 122)	Persona 2 (Small, N = 163)	Persona 3 (Medium, N = 115)
Content Creation	C: Moderate (Mean = 3.07) N: Yes (p-value = 0.036*)	C: High (Mean = 3.26) N: No	C: High (Mean = 3.63) N: No
Brand Building and Public Relations	C: Moderate (Mean = 3.32) N: Yes (p-value = 0.001*)	C: Moderate (Mean = 3.39) N: No	C: High (Mean = 3.63) N: No
Customer Relationship Management	C: Moderate (Mean = 3.10) N: Yes (p-value = 0.022*)	C: Moderate (Mean = 3.37) N: No	C: High (Mean = 3.70) N: No
Technical Competences			
E-mail Marketing	C: Low (Mean = 2.43) N: Yes (p-value =0.045*)	C: Moderate (Mean = 2.86) N: No	C: High (Mean = 3.61) N: No
Video Marketing	C: Moderate (Mean = 2.93) N: Yes (p-value =0.009*)	C: Moderate (Mean = 3.28) N: No	C: High (Mean = 3.28) N: No
Social Media Marketing	C: Moderate (Mean = 3.28) N: Yes (p-value = 0.000*)	C: High (Mean = 3.41) N: No	C: High (Mean = 3.77) N: Yes (p-value = 0.032*)
Mobile Marketing	C: Moderate (Mean = 3.31) N: Yes (p-value = 0.000*)	C: High (Mean = 3.42) N: No	C: High (Mean = 3.79) N: Yes (p-value = 0.021*)
Search Engine Organization	C: Moderate (Mean = 2.86) N: Yes (p-value = 0.028*)	C: Moderate (Mean = 3.33) N: No	C: High (Mean = 3.71) N: Yes (p-value = 0.047*)
Behavioural competencies			
Creative Thinking	C: Moderate (Mean = 3.30) N: Yes (p-value = 0.025*)	C: Moderate (Mean = 3.31) N: No	C: High (Mean = 3.69) N: No
Communication and Presentation	C: Moderate (Mean = 3.12) N: No	C: High (Mean = 3.44) N: No	C: High (Mean = 3.74) N: No
Interaction with Customer Online	C: Moderate (Mean = 3.27) N: No	C: High (Mean = 3.44) N: No	C: High (Mean = 3.77) N: Yes (p-value = 0.017*)
Affiliate marketing.	C: Moderate (Mean = 3.11) N: Yes (p-value = 0.024*)	C: High (Mean = 3.42) N: No	C: High (Mean = 3.75) N: Yes (p-value = 0.009*)
Change Management	C: Moderate (Mean = 3.09) N: No	C: Moderate (Mean = 3.34) N: Yes (p-value = 0.003*)	C: High (Mean = 3.72) N: Yes (p-value = 0.003*)
Results from interview			
Digital Marketing Work Characteristics	– Use Line and Google Ads for business marketing and public relations. – Create content and buy ads to promote business on social media.	– Use Line and Google Ads for business marketing and public relations. – Create content and buy ads to promote business on social media.	– Use influencers to review products and businesses. – Create a website to raise visibility and credibility for business.
Pain Point (Problems of digital marketing operations)	– Advertising that does not match the target audience. – Have basic online marketing knowledge but lack proficiency in platform functions.	– Lack of skills and information to answer customer questions.	– Customer engagement on each online platform fell short of targets. – A lack of search engine optimization capabilities.

Notes: C is the current level of digital marketing competency; N is the needs for digital marketing capabilities.

4.4. Results of step 3: develop a persona of each enterprise size

Persona cards were created using the necessary datasets listed in Table 6. Persona cards are presented in Figures 5–7 (in Appendix). One persona card was created for each enterprise size, which details the length of business operation, position level, the core digital marketing competencies, technical digital marketing competencies, and behavioural digital marketing competencies. The current competency level and the needs for digital marketing skills, which have significantly differed, were used to present the necessity of enhancing digital marketing competencies in the persona card.

Micro enterprises, as shown in Persona Card 1 in Figure 5 (in Appendix), have a moderate level of core competencies, a moderate level of behaviour, and a moderate level of technical competencies, except for e-mail marketing skills, which are at a low level. The pain point for digital marketing personnel in micro enterprises was the lack of basic digital marketing knowledge and online advertising skills. They need to enhance their digital marketing competencies in areas such as marketing strategy planning, email marketing, social media marketing, and so on.

Small enterprises, as shown in Persona Card 2 in Figure 6 (in Appendix), show that most of the core and technical digital marketing competencies were at a moderate level, while most of the behavioural digital marketing competencies were at a high level. The pain point for digital marketing personnel in small enterprises was the lack of skill and information to answer customer questions. However, most of their digital marketing competencies were at a moderate level; they needed to focus on enhancing only their change management skills.

Medium-sized businesses generally exhibit high levels of core, technical, and behavioral digital marketing skills, as seen in Persona Card 3 in Figure 7 (in Appendix), showcasing strong competencies in this sector. However, shortcomings in search engine optimization and limited online platform traffic are notable concerns. Improvement areas include strategy planning, social media marketing, SEO, client interaction, and adaptability skills.

4.5. Discussion

Pathum Thani Province, with its economic growth and rising number of entrepreneurs, provides a dynamic environment for studying digital marketing capabilities. The medium-sized service business in Pathum Thani Province excels in mobile, personalization, and social media marketing, demonstrating proficiency in digital platforms. However, regions with different economic conditions or levels of digital infrastructure might exhibit varied results. However, there's room for improvement in change management, online customer interaction, and affiliate marketing. Addressing these areas can enhance competitiveness and align capabilities with market needs, boosting overall effectiveness in digital marketing strategies. Compared to similar studies conducted in more urbanized settings, the results are similar to those of Eze et al. (2021), which show many aspects in digital marketing in MSMEs, mainly leadership traits, organizational skills, and targeted strategy improvements. These are all important for using digital platforms to get ahead of the competition. However, our findings suggest that MSMEs in Pathum Thani are relatively more advanced in digital marketing adoption. It has been highly industrialized and urbanized. It hosts numerous industrial estates, educational institutions, and research centres.

The comparison between digital marketing capabilities and needs provides valuable insights into the strengths and weaknesses of small enterprises' digital marketing strategies.

While the data indicates a level of competency across various digital marketing types, the discrepancy between capabilities and needs highlights areas that require immediate attention and improvement. For instance, the relatively high capabilities in areas such as social media marketing and mobile marketing suggest that small enterprises have invested in these digital marketing channels and have developed proficiency. However, the higher corresponding needs in areas such as change management and affiliate marketing suggest that while capabilities exist, there may be challenges in effectively implementing and managing these strategies within small enterprises. Furthermore, the alignment between capabilities and needs in certain areas, such as communication and presentation and interaction with customers online, indicates that small enterprises are aware of the importance of these competencies and have appropriately prioritized them in their digital marketing strategies. However, continuous improvement is necessary to ensure that capabilities remain aligned with evolving market trends and consumer preferences. This results consistent with the research from Sima et al. (2020), in that both underscore the pervasive influence of digitalization but on different scales and contexts, with one emphasizing broader societal shifts and the other focusing on tactical business strategies within the digital marketing sphere. In conclusion, the comparison between digital marketing capabilities and needs highlights both the strengths and areas for improvement within small enterprises' digital marketing strategies. Addressing the identified needs through targeted initiatives and investments can help small enterprises enhance their overall digital marketing effectiveness and competitiveness in the market.

The persona cards serve as a practical tool in assessing and identifying specific digital marketing competency gaps and strengths across different enterprise sizes. This understanding is crucial for developing targeted interventions and strategies to enhance digital marketing effectiveness and competitive advantage in a rapidly evolving digital landscape.

5. Conclusions

The survey encompassed 400 MSMEs, exhibiting diversity in business longevity and role performance levels. The data underscores the sector's dynamism, showcasing growth in newer businesses and stability in those operating for over a decade. The presence of executives at various levels suggests structured leadership irrespective of size. MSME sizes are evenly distributed, with small enterprises leading at 40.75%, followed by micro (30.50%) and medium (28.75%) enterprises.

The analysis reveals both strengths and weaknesses in digital marketing across MSMEs. Micro enterprises exhibit notable gaps, particularly in strategy planning, personalization, content creation, and brand building, suggesting areas for improvement. Medium enterprises show alignment but still have room for growth in strategy and content creation. Small enterprises demonstrate the closest alignment between capabilities and needs, with fewer identified gaps.

Medium enterprises generally meet or slightly exceed their digital marketing needs across various competencies. However, they fall short in areas like Content Creation for Micro Enterprises, Search Engine Optimization, and Email Marketing. Yet, competencies like Mobile Marketing and Social Media Marketing surpass their needs. This summary suggests where medium enterprises should concentrate efforts to align capabilities with perceived needs in digital marketing. Statistical analyses show significant capability gaps between micro and small enterprises in various areas of digital marketing. This underscores the need for

micro-enterprises to enhance their capabilities to stay competitive, particularly in social media marketing, mobile marketing, and search engine optimization, where improvements are crucial for keeping pace with larger counterparts.

The data shows that micro, small, and medium-sized enterprises have moderate digital marketing competencies but need improvement. Key areas include creative thinking, online customer interaction, affiliate marketing, and change management. Targeted efforts in these areas can enhance competitiveness. Persona cards for different enterprise sizes highlight unique competencies and gaps: micro enterprises lack foundational skills, small enterprises need better change management, and medium-sized enterprises require improvements in SEO and online customer engagement. This emphasizes the importance of focused competency development for enhanced digital marketing effectiveness across enterprise sizes.

The study's scope is confined to Thailand's service sector, limiting its applicability elsewhere. With only 400 surveyed businesses and 10 interviewees, the results might not fully capture the broader SME landscape. Additionally, the focus is solely on digital marketing capabilities, omitting potential influences like market competition or sector-specific issues.

Expanding the survey to encompass a broader range of service sector MSMEs in Thailand could offer a deeper insight into their digital marketing capabilities and needs. Additionally, exploring how market competition and sector-specific hurdles affect digital marketing effectiveness in these businesses could uncover key factors impacting their digital marketing success.

The study's focus on Thailand's service enterprises may restrict the application of its findings to other areas or businesses. Therefore, one should exercise caution when applying these findings beyond the specific context of this study. While the sample size of 400 surveyed respondents and 10 interviewers provides a picture of the sector, it may not completely cover Thailand's MSMEs. Although this sample size is informative, it may not reflect the diversity and complexity of all MSMEs. Despite these limitations, the study provides valuable insights into the digital marketing methods of service-sector MSMEs in Thailand. It highlights important areas that will help enterprises succeed and identifies opportunities for future growth. Future research might build on this work by accounting for other aspects and the diversity of the sampling group that will impact digital marketing efficacy. In conclusion, while the scope and sample size of this study have limitations, the findings provide useful insight and can be used for further inquiry and more thorough studies.

6. Contribution

The research identifies specific areas lacking digital marketing competencies in MSMEs, like email marketing in micro-enterprises and change management in small ones. This targeted focus enables more effective interventions. Its contribution lies in the comprehensive examination and nuanced understanding of digital marketing competencies across MSMEs, achieved through persona cards detailing core, technical, and behavioural skills alongside operational and leadership characteristics, offering key insights.

1. The study's findings provide crucial insights for policymakers, organizational

decision-makers, and industry associations. By revealing the current state of digital marketing capabilities and pinpointing challenges, it lays a groundwork for crafting policies and strategies to enhance skill development. This can foster a more competitive business

ecosystem adept at navigating digital transformations. For example, the government can create tax incentives and grants for MSMEs investing in digital marketing training programs, or it can create sector-specific digital marketing training programs in partnership with industry groups to address unique challenges and opportunities within different sectors.

2. This study provides MSME practitioners with insights into their digital marketing capabilities and opportunities for improvement. This insight enables fine-tuning digital marketing tactics to better match the enterprise's capabilities and needs, thereby improving marketing effectiveness and promoting corporate growth.

3. Through a detailed investigation of digital marketing abilities across various firm sizes, this research adds to the scholarly discourse on digital marketing. It focuses on the unique digital marketing environment that MSMEs face, which helps us better understand how these skills change as the firm grows and becomes more established. As a result, it advances our understanding of digital marketing and provides insightful information that is especially relevant to the research on MSMEs.

Overall, this research contributes significantly to the field of digital marketing by offering actionable insights for educators, policymakers, and practitioners, aimed at enhancing the digital competencies of MSMEs and driving their growth in the digital era.

Acknowledgements

Funding

Author contributions

Conceptualization, NC, SI, SW, and methodology, SI, and NC; validation, SW, and RS; formal analysis, NC; writing – original draft preparation, NC, SI and SW; writing – review and editing, SI, and NB; visualization, NC and SW. All authors have read and agreed to the published version of the manuscript.

Disclosure statement

Authors don't have any competing financial, professional, or personal interests from other parties.

References

Afandi, A., Amsari, S., & Hayati, I. (2023). Digital marketing training by Lazismu Medan City to increase the MSMEs competitiveness. *Community Empowerment*, *8*(5), 676–681. https://doi.org/10.31603/ce.9122

Alexander, L. (2016). *What is Digital Marketing: Everything You Need to Know.* https://blog.hubspot.com/marketing/what-is-digital-marketing#why-digital-marketing-is-important

Alghizzawi, M., Habes, M., Al Assuli, A., & Ezmigna, A. A. R. (2024). Digital marketing and sustainable businesses: As Mobile apps in tourism. In A. Hamdan & E. S. Aldhaen (Eds.), *Artificial intelligence and transforming digital marketing* (pp. 3–13). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-35828-9_1

Behera, R. K., Gunasekaran, A., Gupta, S., Kamboj, S., & Bala, P. K. (2020). Personalized digital marketing recommender engine. *Journal of Retailing Consumer Services, 53*, Article 101799. https://doi.org/10.1016/j.jretconser.2019.03.026

Camilleri, M. A. (2020). The use of data-driven technologies for customer-centric marketing. *International Journal of Big Data Management*, *1*(1), 50–63. https://doi.org/10.1504/IJBDM.2020.106876

Devitt, F. (2021). Creating personas from design ethnography and grounded theory. *Journal of Usability Studies*, *13*(3). https://mural.maynoothuniversity.ie/17505/1/FrankDevittPersonas2021.pdf

Dion, D., & Arnould, E. (2016). Persona-fied brands: managing branded persons through persona. *Journal of Marketing Management*, *32*(1–2), 121–148. https://doi.org/10.1080/0267257X.2015.1096818

Djakasaputra, A., Wijaya, O., Utama, A., Yohana, C., Romadhoni, B., & Fahlevi, M. (2021). Empirical study of Indonesian SMEs sales performance in digital era: The role of quality service and digital marketing. *International Journal of Data and Network Science*, *5*(3), 303–310. https://doi.org/10.5267/j.ijdns.2021.6.003

Egbu, V. N., & Azih, N. (2023). Marketing skills required by start-up operators for effective management of small and medium scale enterprises. *British Journal of Marketing Studies*, *11*(3), 90–99. https://doi.org/10.37745/bjms.2013/vol11n39099

Eze, S. C., Awa, H. O., Chinedu-Eze, V. C., & Bello, A. O. (2021). Demographic determinants of mobile marketing technology adoption by small and medium enterprises (SMEs) in Ekiti State, Nigeria. *Humanities Social Sciences Communications*, *8*(1), 1–11. https://doi.org/10.1057/s41599-021-00762-5

Ghorbani, M., Karampela, M., & Tonner, A. (2022). Consumers' brand personality perceptions in a digital world: A systematic literature review and research agenda. *International Journal of Consumer Studies*, *46*(5), 1960–1991. https://doi.org/10.1111/ijcs.12791

Graham, A. K., Neubert, S. W., Chang, A., Liu, J., Fu, E., Green, E. A., Kornfield, R., & Nicholas, J. (2021). Applying user-centered design methods to understand users' day-to-day experiences can inform a mobile intervention for binge eating and weight management. *Frontiers in Digital Health*, *3*, Article 651749. https://doi.org/10.3389/fdgth.2021.651749

Grewal, D., Hulland, J., Kopalle, P. K., & Karahanna, E. (2020). The future of technology and marketing: A multidisciplinary perspective. *Journal of the Academy of Marketing Science, 48*, 1–8. https://doi.org/10.1007/s11747-019-00711-4

Hasanat, M. W., Hoqueb, A., Hassanc, M. M., & Hamide, A. B. A. J. X. A. J. K. D. X. (2020). The lack of digital marketing skills: developing a digital marketer model for the retail industries. *Journal of Xi'an University of Architecture Technology, 12*(3), 2673–2680.

Israel, G. D. (1992). *Sampling the evidence of extension program impact*: Citeseer.

Jansen, B. J., Salminen, J. O., & Jung, S. (2020). Data-driven personas for enhanced user understanding: combining empathy with rationality for better insights to analytics. *Data and Information Management*, *4*(1), 1–17. https://doi.org/10.2478/dim-2020-0005

Kingsnorth, S. (2022). *Digital marketing strategy: An integrated approach to online marketing*. Kogan Page Publishers.

Kovács, I. (2021). Digital marketing soft skills and university students' perceptions of employability. *GiLE Journal of Skills Development, 1*(1), 25–36. https://doi.org/10.52398/gjsd.2021.v1.i1.pp25-36

Märtin, C., Bissinger, B. C., & Asta, P. (2023). Optimizing the digital customer journey – Improving user experience by exploiting emotions, personas and situations for individualized user interface adaptations. *Journal of Consumer Behaviour*, *22*(5), 1050–1061. https://doi.org/10.1002/cb.1964

Melović, B., Jocović, M., Dabić, M., Vulić, T. B., & Dudic, B. (2020). The impact of digital transformation and digital marketing on the brand promotion, positioning and electronic business in Montenegro. *Technology in Society*, *63*, Article 101425. https://doi.org/10.1016/j.techsoc.2020.101425

Miles, C. (2020). Intermediaries and personas: A radical rhetorical reading of marketing work. *Persona Studies*, *6*(1), 72–82. https://doi.org/10.21153/psj2020vol6no1art947

Office of Small and Medium Enterprise Promotion. (2020). *Dashboard SME Big Data*. https://www.smebigdata.com/msme/dashboard-a

Peter, M. K., & Dalla Vecchia, M. (2021). The digital marketing toolkit: a literature review for the identification of digital marketing channels and platforms. In *New trends in business information systems and technology* (pp. 251–265). Springer. https://doi.org/10.1007/978-3-030-48332-6_17

Polanco-Diges, L., & Debasa, F. (2020). The use of digital marketing strategies in the sharing economy: A literature review. *Journal of Spatial Organizational Dynamics*, *8*(3), 217–229.

Rangaswamy, A., Moch, N., Felten, C., Van Bruggen, G., Wieringa, J. E., & Wirtz, J. (2020). The role of marketing in digital business platforms. *Journal of Interactive Marketing*, *51*(1), 72–90. https://doi.org/10.1016/j.intmar.2020.04.006

Sharma, A., Sharma, S., & Chaudhary, M. (2020). Are small travel agencies ready for digital marketing? Views of travel agency managers. *Tourism Management*, *79*, Article 104078. https://doi.org/10.1016/j.tourman.2020.104078

Sima, V., Gheorghe, I. G., Subić, J., & Nancu, D. (2020). Influences of the industry 4.0 revolution on the human capital development and consumer behavior: A systematic review. *Sustainability*, *12*(10), Article 4035. https://doi.org/10.3390/su12104035

Siricharoen, W. V. (2021). Using empathy mapping in design thinking process for personas discovering. In P. C. Vinh, & A. Rakib (Eds.), *Lecture notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering: Vol. 343. Context-aware systems and applications, and nature of computation and communication. ICCASA ICTCC 2020*. Springer. https://doi.org/10.1007/978-3-030-67101-3_15

Ten Klooster, I., Wentzel, J., Sieverink, F., Linssen, G., Wesselink, R., & van Gemert-Pijnen, L. (2022). Personas for better targeted eHealth technologies: User-centered design approach. *JMIR Human Factors*, *9*(1), Article e24172. https://doi.org/10.2196/24172

Terho, H., Mero, J., Siutla, L., & Jaakkola, E. (2022). Digital content marketing in business markets: Activities, consequences, and contingencies along the customer journey. *Industrial Marketing Management*, *105*, 294–310. https://doi.org/10.1016/j.indmarman.2022.06.006

The Office of SMEs Promotion. (2021). *Economic forecast for Thai MSMEs in 2021*. https://new.sme.go.th/uploads/file/download-20210916133225.pdf

Wirtz, J., & Lovelock, C. (2021). *Services marketing: People, technology, strategy.* World Scientific. https://doi.org/10.1142/y0024

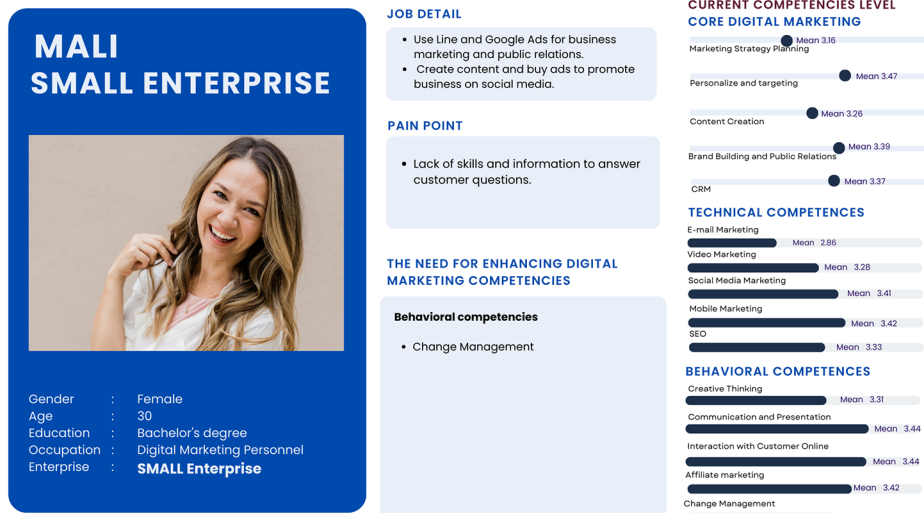# APPENDIX

Figure 5. Persona of micro enterprise

Figure 6. Persona of small enterprise

Figure 7. Persona of medium enterprises