

Construction of Entrepreneurial Identity Among Maritime Transportation Student In The Digital Maritime Business Ecosystem

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Abstract

The rapid digital transformation of the maritime industry has fundamentally reshaped the career orientation of maritime transportation students, shifting their aspirations from conventional employment in the shipping industry toward technology-driven entrepreneurship. This transition has created a new digital maritime business ecosystem that not only generates economic opportunities but also facilitates the social construction of entrepreneurial identity. This study aims to examine the process through which maritime transportation students construct their entrepreneurial identity within the digital maritime business ecosystem and to identify the internal and external factors influencing this process.

A qualitative approach employing an interpretative phenomenological design was adopted. Data were collected through in-depth interviews with twelve maritime transportation students actively operating digital maritime businesses. Additional data were obtained from digital business documentation and observations of participants' social media activities. The collected data were analyzed using data reduction, thematic categorization, and contextual interpretation.

The findings reveal that entrepreneurial identity develops through three interconnected stages: identity exploration, social legitimization, and entrepreneurial role internalization. This process is shaped by the interaction between personal motivation, entrepreneurial self-efficacy, supportive entrepreneurial communities, and the utilization of digital ecosystems, including social media and maritime digital business platforms. Furthermore, digital transformation within the logistics and shipping industries has significantly influenced students' career preferences by encouraging technology-based entrepreneurial activities.

The study concludes that entrepreneurial identity in the context of digital maritime business represents a dynamic socio-digital construct emerging from the integration of entrepreneurial experience, digital presence, and ongoing industrial transformation. These findings contribute to the theoretical development of entrepreneurial identity research while offering practical implications for strengthening digital-based maritime entrepreneurship education in higher education institutions.

Keywords: entrepreneurial identity, maritime transportation students, digital entrepreneurship, maritime business, digital ecosystem, interpretative phenomenology

Introduction

The rapid advancement of digital transformation in the global maritime sector has significantly altered the structure of maritime transportation businesses, giving rise to technology-driven maritime ecosystems. As the world's largest archipelagic nation, Indonesia has experienced remarkable growth in the digitalization of maritime services, including digital freight forwarding, smart port systems, electronic shipping services, and application-based logistics marketplaces. The implementation of the National Logistics Ecosystem (NLE) and other digital initiatives has accelerated the integration of maritime logistics, thereby improving efficiency, transparency, and competitiveness across the maritime industry.

The digital transformation of the maritime industry has also influenced the career aspirations of university students, particularly those enrolled in maritime transportation programs. Traditionally, maritime transportation students prepared themselves for professional careers as seafarers, shipping officers, port operators, or logistics personnel. However, the emergence of digital technologies and platform-based maritime businesses has broadened career opportunities beyond conventional employment, encouraging students to establish their own technology-

oriented maritime enterprises. Consequently, entrepreneurship has become an increasingly attractive career alternative among young maritime professionals.

Entrepreneurship is no longer viewed solely as an economic activity focused on generating profit. Contemporary entrepreneurship emphasizes the development of entrepreneurial identity, which reflects how individuals perceive themselves as entrepreneurs through continuous interaction with their social environment, technological advancement, and entrepreneurial experiences. Entrepreneurial identity is socially constructed through learning processes, community participation, self-reflection, and recognition from others rather than being an innate personal characteristic. Therefore, understanding how entrepreneurial identity develops among maritime transportation students is essential for strengthening entrepreneurship education within maritime higher education.

Previous studies have extensively examined entrepreneurial intention, entrepreneurial self-efficacy, and digital entrepreneurship. Nevertheless, most existing research has focused primarily on entrepreneurial behavior or business performance while paying limited attention to the identity construction process underlying entrepreneurial development. Furthermore, studies addressing digital entrepreneurship within the maritime sector remain relatively scarce, with greater emphasis placed on technological innovation and industrial transformation rather than on the subjective experiences of student entrepreneurs. This indicates a significant theoretical and contextual research gap concerning how entrepreneurial identity is socially constructed within the digital maritime business ecosystem.

To address this gap, the present study adopts an interpretative phenomenological approach to explore the lived experiences of maritime transportation students who actively operate digital maritime businesses. Specifically, this study aims to (1) examine the process through which entrepreneurial identity is constructed among maritime transportation students within the digital maritime business ecosystem and (2) identify the internal and external factors influencing this identity construction process. The findings are expected to contribute to the advancement of entrepreneurial identity theory while providing practical recommendations for developing digital-based maritime entrepreneurship education that is better aligned with the evolving needs of the maritime industry.

Research Method

This study employed a **qualitative research approach** using **Interpretative Phenomenological Analysis (IPA)** to explore the process through which maritime transportation students construct their entrepreneurial identity within the digital maritime business ecosystem. The IPA approach was selected because it enables an in-depth understanding of participants' lived experiences and the meanings they attribute to their entrepreneurial journeys in the context of rapid digital transformation in the maritime industry. Rather than examining causal relationships among variables, this study focused on interpreting the subjective experiences that shape entrepreneurial identity.

The research was conducted among undergraduate students enrolled in the Maritime Transportation Study Program who were actively engaged in digital maritime business activities. A **purposive sampling** technique was applied to recruit participants who met the following criteria: (1) active students in the Maritime Transportation program, (2) owners or managers of digital maritime businesses, (3) having operated their businesses for at least one year, and (4) willing to participate in in-depth interviews. Based on these criteria, **twelve participants** were selected as research informants. Their businesses represented diverse sectors of the digital

maritime economy, including digital freight forwarding, ship agency services, logistics marketplaces, maritime consultancy, online sea freight services, maritime logistics startups, cargo handling services, freight brokerage, marine supply services, maritime digital content creation, logistics consultancy, and digital shipping services.

Data were collected through **semi-structured, in-depth interviews**, allowing participants to describe their entrepreneurial experiences, motivations, identity development, and interactions within the digital maritime ecosystem. To enhance data credibility, interviews were complemented by **participant observations**, documentation of business activities, and analysis of digital artifacts, including social media content, online business platforms, and other digital records related to participants' entrepreneurial activities. This triangulation strategy strengthened the trustworthiness and richness of the collected data.

To ensure the credibility, dependability, and confirmability of the findings, several trustworthiness procedures were implemented. **Source triangulation** was conducted by comparing information obtained from interviews, observations, and documentary evidence. **Member checking** was performed by asking participants to review the interview interpretations to ensure that the findings accurately reflected their experiences. In addition, **peer debriefing** with qualitative research experts was employed to enhance the rigor and consistency of the analytical process.

The data were analyzed using the **interactive model proposed by Miles, Huberman, and Saldaña (2020)**, which consists of three interconnected stages: **data condensation, data display, and conclusion drawing/verification**. During the data condensation stage, interview transcripts were systematically reviewed, coded, and categorized according to major themes, including entrepreneurial motivation, social legitimacy, digital business practices, and entrepreneurial identity construction. Subsequently, the categorized data were organized into thematic matrices and interpretative narratives to facilitate the identification of relationships among emerging categories. Finally, conclusions were developed through iterative interpretation and continuous verification to ensure that the findings accurately represented the participants' lived experiences. The analytical process was conducted recursively and reflectively to produce a comprehensive understanding of entrepreneurial identity construction among maritime transportation students within the digital maritime business ecosystem.

To support the analytical process, **NVivo 14** software was utilized for organizing qualitative data, conducting thematic coding, and visualizing relationships among categories. The use of qualitative data analysis software enhanced the systematic management of complex interview data and improved analytical transparency. Furthermore, **Microsoft Excel** was employed to organize documentary data and classify participants' demographic and business profiles. The integration of these analytical tools contributed to a rigorous, transparent, and academically accountable research process, enabling the study to generate valid and meaningful insights into the dynamics of entrepreneurial identity construction within the digital maritime business ecosystem.

Results and Discussion

Overview of the Research Findings

The findings reveal that the construction of entrepreneurial identity among maritime transportation students within the digital maritime business ecosystem is a dynamic social process shaped by the interaction of personal characteristics, academic experiences, technological advancement, and structural changes in the global maritime industry. Based on in-depth interviews

with twelve students actively engaged in digital maritime businesses, the study found that most participants initiated their entrepreneurial activities following a shift in their perceptions of career opportunities within the maritime sector. Rather than viewing maritime professions exclusively as careers aboard ships or within shipping companies, participants increasingly perceived digital entrepreneurship as a promising pathway for professional development, economic independence, and career sustainability.

The rapid digital transformation of the logistics and maritime transportation sectors has significantly influenced students' career aspirations. Participants indicated that digital technologies have lowered barriers to entry by enabling business establishment with relatively limited financial capital through the utilization of social media platforms, digital marketplaces, and online entrepreneurial communities. Consequently, digitalization has transformed not only maritime business models but also the professional identities of future maritime professionals.

Another important finding concerns the motivation underlying students' engagement in digital entrepreneurship. Participants emphasized that career flexibility and financial independence became increasingly important following the uncertainty experienced by the maritime industry after the COVID-19 pandemic. Digital entrepreneurship was therefore perceived as an adaptive strategy for responding to technological disruption and changing labor market conditions. These findings suggest that entrepreneurial identity evolves as an adaptive response to broader socio-economic transformations affecting the maritime sector.

Furthermore, entrepreneurial identity was found to develop through continuous interaction with entrepreneurial communities, digital media, and the academic environment. Students who actively participated in business seminars, startup communities, and entrepreneurship training programs demonstrated greater entrepreneurial confidence and stronger commitment to developing digital maritime enterprises. This finding highlights the critical role of social legitimacy in strengthening entrepreneurial identity.

Characteristics of Research Participants

The participants were predominantly between **20 and 24 years of age** and were actively enrolled in the Maritime Transportation Study Program. Most participants independently managed their businesses, while several collaborated with fellow student entrepreneurs. Their business activities represented diverse sectors within the digital maritime economy, including digital freight forwarding, ship agency services, logistics marketplaces, maritime consulting, online sea freight services, maritime logistics startups, cargo handling services, freight brokerage, marine supply services, digital maritime content creation, logistics consultancy, and digital shipping services. Social media constituted the primary business platform for nearly all participants. Applications such as Instagram, TikTok, WhatsApp Business, LinkedIn, and various digital marketplaces were extensively utilized to establish customer relationships, promote services, and strengthen participants' professional identities as digital maritime entrepreneurs. Digital media therefore functioned not only as marketing instruments but also as mechanisms for social recognition and professional legitimacy.

The study further demonstrated that participants with more than two years of entrepreneurial experience exhibited higher levels of entrepreneurial self-confidence, broader professional networks, and stronger market understanding than those who had recently initiated their businesses. Conversely, participants with limited entrepreneurial experience reported greater uncertainty regarding their entrepreneurial identities due to insufficient business experience and resource constraints.

Participants also demonstrated diverse entrepreneurial motivations. While some pursued entrepreneurship primarily for financial independence, others were motivated by technological innovation, professional autonomy, or opportunities within the expanding digital maritime industry. These findings indicate that entrepreneurial identity is simultaneously influenced by economic, social, technological, and psychological factors.

Transformation of Career Orientation

The findings indicate that digital transformation has fundamentally reshaped the career orientation of maritime transportation students. Traditionally, students prepared for careers as seafarers, shipping officers, maritime educators, or logistics professionals. However, the rapid expansion of digital maritime businesses has encouraged many students to perceive entrepreneurship as an attractive alternative career path.

Participants reported that conventional maritime occupations were often associated with limited flexibility and constrained opportunities for creativity, whereas digital entrepreneurship offered greater autonomy, innovation, and scalability. Moreover, digital businesses enabled students to establish commercial ventures while still completing their university studies, thereby accelerating professional development.

These findings are consistent with **Social Identity Theory**, suggesting that professional identity evolves through membership in socially valued groups. Students increasingly identified themselves as members of digital entrepreneurial communities characterized by innovation, flexibility, and economic independence rather than solely as future employees within the shipping industry.

The analysis identified a three-stage process through which entrepreneurial identity develops. The **first stage, identity exploration**, occurs when students become interested in entrepreneurship through exposure to social media, entrepreneurial communities, academic experiences, and startup activities. At this stage, entrepreneurship is perceived primarily as a potential career opportunity.

The **second stage, social legitimization**, emerges when students receive recognition from customers, peers, and entrepreneurial communities. Social media platforms play an essential role in this stage by enabling students to develop personal branding, promote business activities, and establish professional credibility. The **third stage, identity internalization**, is characterized by entrepreneurship becoming an integral component of participants' professional self-concepts. Entrepreneurship is no longer regarded as a temporary activity but instead becomes embedded within students' long-term career aspirations.

Importantly, successful business experiences and positive social recognition were found to reinforce entrepreneurial identity. As students accumulated entrepreneurial achievements, their confidence and commitment toward entrepreneurship increased substantially. These findings extend the work of Fauchart and Gruber (2020) by demonstrating that entrepreneurial identity within digital maritime contexts develops not only through entrepreneurial experience but also through digital visibility and virtual personal branding.

The digital ecosystem emerged as one of the most influential factors shaping entrepreneurial identity. Participants consistently emphasized that social media platforms, digital marketplaces, startup communities, webinars, and online learning resources facilitated business development while simultaneously strengthening entrepreneurial confidence and legitimacy. Digital platforms expanded business networks beyond geographical boundaries, enabling students to access customers, industry information, and entrepreneurial knowledge more efficiently than

through traditional business channels. Consequently, digital technology functions simultaneously as a business infrastructure, learning environment, and identity-building mechanism.

The findings demonstrate that entrepreneurial identity is influenced by the interaction between internal and external factors.

Internal factors include:

1. Economic motivation
2. Entrepreneurial self-efficacy
3. Entrepreneurial mindset
4. Digital literacy
5. Academic knowledge in maritime transportation

External factors include:

1. Entrepreneurial communities
2. University support
3. Digital technology
4. Social media
5. Emerging market opportunities within digital maritime logistics

Students possessing strong entrepreneurial self-efficacy and digital competence demonstrated greater resilience and adaptability in developing maritime businesses. Likewise, institutional support through entrepreneurship education, startup incubation programs, and digital business training substantially strengthened entrepreneurial identity.

Unlike previous studies that primarily examined entrepreneurial intention or business performance using quantitative approaches, this research focuses on the **social construction of entrepreneurial identity** through participants' lived experiences. Furthermore, whereas earlier research generally regarded digital technology as a business tool, this study demonstrates that digital platforms also function as mechanisms for social legitimacy, identity construction, and professional recognition.

Methodologically, the use of **Interpretative Phenomenological Analysis (IPA)** enables a richer understanding of subjective entrepreneurial experiences than conventional survey-based approaches. Consequently, this study contributes both theoretically and methodologically to entrepreneurship research within the maritime sector.

Conclusion

This study concludes that the entrepreneurial identity of maritime transportation students within the digital maritime business ecosystem develops through a dynamic process comprising **identity exploration, social legitimization, and identity internalization**. Entrepreneurial identity is shaped by the interaction of internal factors—including entrepreneurial motivation, self-efficacy, digital literacy, and entrepreneurial mindset—and external influences such as digital ecosystems, entrepreneurial communities, institutional support, and technological transformation within the maritime industry.

Theoretically, this study extends the concept of entrepreneurial identity by introducing the notion of **digital entrepreneurial identity** within the maritime context. The findings demonstrate that entrepreneurial identity is not solely determined by individual characteristics or entrepreneurial intention but is socially and digitally constructed through virtual interaction, online communities, digital branding, and participation in digital maritime business ecosystems.

From a practical perspective, the findings suggest that maritime higher education institutions should strengthen the integration of digital entrepreneurship into maritime education through

curriculum development, startup incubation programs, digital entrepreneurship training, and partnerships with industry stakeholders. Such initiatives will prepare graduates not only as competent maritime professionals but also as innovative entrepreneurs capable of responding to the rapidly evolving digital maritime economy.

Future research should employ comparative and longitudinal designs involving multiple maritime institutions and disciplines to obtain a more comprehensive understanding of entrepreneurial identity formation across diverse educational and industrial contexts.

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