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Digital Knowledge and Innovativeness: Catalysts for Digital Entrepreneurship Success in Taiwan's Architecture and Interior Design Industries

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Abstract

This study examines the relationship between digital knowledge, innovativeness, and digital entrepreneurship success among entrepreneurs in Taiwan's architecture and interior design industries. The study's objectives are to develop a resource-based and dynamic capability theory, assess the effectiveness of digital entrepreneurship, and investigate Taiwanese entrepreneurs in the specified sectors. An online survey was conducted with 218 entrepreneurs of architecture and interior design firms in Taiwan. Structural equation modeling (SEM) analysis revealed that a focus on digitalization positively influences innovativeness. Furthermore, the study found significant associations between digital capability, digital orientation, digital literacy, and the success of digital entrepreneurs. The findings emphasize the importance of continuous learning and strategic planning in online business entrepreneurship. Theoretical insights from the study contribute to a deeper understanding of innovativeness in the architecture and interior design industries. Future research can explore various forms of innovativeness to support entrepreneurial success. The study concludes with important implications for policy, recommendations for further research, and practical implications for entrepreneurs in the field.

Keywords

Digital Knowledge, Innovativeness, Digital Entrepreneurship Success, Design Industries.

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1. Introduction

The rapid development of digital innovation has affected every facet of modern life, and the company's leadership is rethinking how to implement internal improvements in response to the external market situation (Nasiri et al., 2022). Historically speaking, the field of interior design has been one that supports an economic sector all its own. According to the Ministry of the Interior, the nation's interior decoration sector comprises 11,090 registered members, for a total of 26,088 professionals and technicians (Reddy et al., 2022). Its framework comprises Small and medium enterprises and microenterprises, and its annual production value has reached NT$130 billion (Young et al., 2020). Homes are the most popular real estate investment option in Taiwan. Apartment complexes are continually being constructed in urban areas where the products are readily sold and realized within a cultural climate of investing fervor.

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To understand the foundations of organizational success and the reason for fulfilling the entrepreneurial approach, entrepreneurs must study and monitor their results and the elements impacting profitability and turnover (Kurczewska et al., 2020). Traditional manufacturing businesses were caught off guard when they faced new, innovative competitors who could undercut their prices and steal their customers thanks to technological advancements (Blaková & Dvoulet, 2018). In the meantime, there is still a lot of discussion among academics about what exactly it is that encourages business growth and entrepreneurial spirit. Successful Taiwanese architecture and interior design startups in emerging and developing markets have been studied with a focus on the factors contributing to the companies' financial and strategic success (AlMulhim, 2021). The success of the Taiwan Architecture and Interior Design Entrepreneurs will be influenced by the degree to which the company can innovate to offer a better deal to its current clientele than its competitors (Lee & Falahat, 2019; Mancha & Shankaranarayanan, 2020; Nasiri et al., 2022; Yanto et al., 2022). Rarely, but occasionally, innovations can dramatically boost sales by penetrating previously untapped markets and drawing in brand-new customers (Ng et al., 2019). A company can expand its domestic and international customer base by offering novel products and services. At the same time, as a result of implementing novel solutions, the business can introduce new ways of doing the same old thing that is more efficient and productive (Jun et al., 2021; Kurczewska et al., 2020). Since innovations can affect both the mean and the variability of success, they also improve a company's operational efficiency.

This research looks at Taiwan's budding architects and interior designers' digital literacy, innovativeness, and business acumen. The ability to "find, evaluate, and communicate information through typing and other media on various digital platforms" is one definition of digital literacy (Yanto et al., 2022). How one acquires, processes and shares digital content is profoundly affected by their unique personality. Information and digital literacy skills, knowledge, and competencies are complementary, say Nasiri et al. (2022). A participant's success in learning and applying digital content is directly related to their aptitude for learning. By "commitment toward the application of digital technology to deliver innovative products, services, and solutions," we can define "digital orientation" (Sultoni et al., 2022). Businesses with a strong digital focus are more likely to adopt new technologies and devote resources to digital initiatives quickly. There is little written on the topic of "digital orientation," which is essentially just another term for "innovation capabilities" (Reddy et al., 2022). They also keep up with new technologies, which helps them develop innovative products. What we mean by "digital capability" is "a company's skill, talent, and expertise to manage digital technologies for new product development" (Khin & Ho, 2018). The company's digital capability perspective regards digital capabilities as its most important strategic asset in today's dynamic and competitive market (Lee et al., 2020; Mugiono et al., 2021). The term "digital capabilities" refers to the subset of digital capabilities that allow businesses to innovate in response to customer needs and market changes (Nasiri et al., 2022). Khin and Ho (2018) state that businesses can better understand customer expectations and compete in the market thanks to the adaptability of digital capabilities to detect and react. The digital economy also provides employees more opportunities to apply their knowledge and abilities in novel contexts.

This research investigates the relationship between digital capability, digital orientation, digital literacy, innovativeness, and digital entrepreneurship success among Taiwan's architecture and interior design entrepreneurs. The study will contribute to understanding the role of digital knowledge and innovativeness in the success of architecture and interior design entrepreneurs in the digital era.

2. Literature review

The advent of the digital era has brought about significant transformations across various sectors, revolutionizing their functions and operations. Businesses in today's digital landscape are increasingly embracing digitalization, leveraging advanced technological tools and solutions. Within this context, the concepts of digital orientation, capability, and literacy have emerged as crucial factors for ensuring competitive advantage against industry rivals. This holds true not only for architecture and interior

design entrepreneurs but also for entrepreneurs across different domains. Therefore, this study aims to examine the levels of innovativeness, digital literacy, and business success among Taiwanese architects and interior designers.

The research is grounded in two theoretical frameworks: resource-based and dynamic capability theories. The resource-based theory provides a managerial framework that helps identify the strategic resources an organization can effectively utilize to achieve sustainable competitive advantage (Shan et al., 2019). For businesses with a strong commitment to the digital realm, their emphasis on innovation becomes more pronounced as they are more inclined to explore novel approaches and ideas to create unique value propositions. On the other hand, dynamic capability theory focuses on developing strategies for senior management to adapt to significant and discontinuous changes while maintaining the minimum required capabilities for competitive survival (Gupta et al., 2018). It emphasizes a company's ability to foster innovation, create new products and processes, and adapt to evolving market dynamics.

By examining the interplay between digital capability, digital orientation, digital literacy, innovativeness, and digital entrepreneurship success, this study aims to shed light on the intricate relationships in Taiwan's architecture and interior design industry. Through empirical investigation, the research seeks to contribute to a deeper understanding of the role played by digital knowledge and innovativeness in driving the success of entrepreneurs in the digital era.

2.1. Digital capability and innovativeness

Digital capabilities, defined as the ability and knowledge to utilize technical data efficiently, have been recognized since the 1980s (Jun et al., 2021). Companies are advised by Sultoni et al. (2022) to invest in training and education to enhance their digital literacy. Incorporating the digital revolution and new methods into businesses is considered productive and strategically important (Khin & Ho, 2018). Beyond facilitating communication within organizations, a company's digital capacity plays a pivotal role in maintaining a sustained competitive advantage over the long term (Shan et al., 2019). Gupta et al. (2018) assert that businesses can better understand customer needs and remain competitive by leveraging their digital capabilities to recognize and respond. Digitization also offers the benefit of applying one's skills and abilities in different professional contexts, thereby boosting organizational efficiency (Jun et al., 2021). While not always considered the most significant source of long-term advantage, digital abilities are seen as valuable resources that are not easily replicated in the business (Sultoni et al., 2022).

Companies lacking access to the same level of technology find it challenging to comprehend the drivers and processes behind product and process innovations (Lee et al., 2020). Technologically savvy businesses can swiftly adapt and integrate new technologies into their operations, resulting in the development of new ideas and improved products (Khin & Ho, 2018; Mancha & Shankaranarayanan, 2020; Nasiri et al., 2022; Shan et al., 2019). The ability and knowledge of modern technological trends are essential elements of any successful business plan (Sultoni et al., 2022). However, successful implementation of technology does not guarantee well-managed utilization and services. Technological competence, as defined by Young et al. (2020), refers to an organization's ability to conceive and create new products and related processes.

In the context of digital goods, a company's "digital capability" refers to its ability to manage digital technology to create innovative products (Zhen et al., 2021). Developing expertise in various areas is necessary for a company's success, which may vary depending on the sector and customer nature (Zhen et al., 2021). Thus, businesses can enhance their knowledge and absorb new ideas by leveraging digital talent (Khin & Ho, 2018). Based on the aforementioned discussion, it is hypothesized that;

Hypothesis 1: Digital capability significantly impacts innovativeness.

2.2. Digital orientation and innovativeness

Digital orientation refers to a company's dedication to utilizing digital technology to create digital goods, offerings, and solutions (Sultoni et al., 2022). It entails focusing on technology within the context of digital systems (Nasiri et al., 2022). Companies that prioritize digital technologies are more inclined to embrace new forms of digital innovation and stay abreast of the ever-changing technological landscape (Khin & Ho, 2018). The resource-based perspective emphasizes that a company's success can be attributed to its unique internal assets that are difficult for competitors to replicate (Lee & Falahat, 2019). In the context of architecture and interior design entrepreneurs, technological orientation toward emerging trends in digital technology is seen as a significant competitive advantage, following the resource-based theory.

Digital orientation applied to architecture and interior design entrepreneurs offers three distinct effects and benefits (Nasiri et al., 2022). Firstly, entrepreneurs in this domain can derive advantages from digital orientation-based strategies by redirecting their resources, values, and overall strategy toward the digital realm (Shan et al., 2019). Secondly, considering the intensity of competition among architecture and interior design entrepreneurs, a digital mindset becomes crucial. It enables architects and interior designers to network with like-minded entrepreneurs globally. Empirical research conducted by Reddy et al. (2022) highlights the connection between digital orientation, innovativeness, and digital entrepreneurship success. Their findings indicate that digital exposure influences product quality and the innovativeness of entrepreneurs and interior designers. Based on the above discussion, it is hypothesized that

Hypothesis 2: Digital orientation significantly impacts innovativeness

2.3. Digital literacy and innovativeness

Digital literacy refers to an individual's awareness, attitude, and capacity to appropriately use digital tools and resources to access, manage, evaluate, and create digital content (Yanto et al., 2022). In today's context, digital literacy encompasses the proficiency to produce, collaborate, connect, and utilize digital tools for both work and leisure activities. It goes beyond the basic ability to use technology and includes a deeper understanding of its potential and application (Zhen et al., 2021). For IT business entrepreneurs in Taiwan's architecture and interior design industry, digital literacy is particularly essential as they heavily rely on online tools and resources for daily operations and problem-solving.

It has been acknowledged that digital injustices exist in both developed and underdeveloped countries, highlighting the importance of promoting digital literacy for all and reducing disparities (Mugiono et al., 2021; Reddy et al., 2022; Young et al., 2020). Increasing digital literacy among the population is crucial to address these disparities and enable constructive social action. Effectively using digital technologies is also vital for creative problem-solving and innovation (Khin & Ho, 2018; Mancha & Shankaranarayanan, 2020). The skills required for effective user education and digital literacy are closely related, as the absorption and application of digital content depend on individual cognitive abilities (Jun et al., 2021). Incorporating digital technology into interactions can facilitate skill development and enhance digital literacy. For entrepreneurs, digital literacy serves as both a foundation and a springboard for technological innovation. The level of innovativeness exhibited by a business in its marketing strategies and day-to-day operations directly impacts its standing within the industry (Jih & Hung, 2020; Khin & Ho, 2018; Mancha & Shankaranarayanan, 2020; Nasiri et al., 2022). Innovations that meet customer needs and preferences increase a business's competitiveness and can lead to revenue growth by attracting new customers and creating new markets (Ng et al., 2019).

Hence, we hypothesized that.

Hypothesis 3: Digital literacy significantly impacts innovativeness

2.4. Innovativeness and digital entrepreneurship success

In order to achieve entrepreneurial success, the process of innovation plays a crucial role by incorporating new ideas, identifying opportunities, and driving developments (Abubakre et al., 2020). Innovativeness, in this context, refers to the willingness to embrace change and contribute to the creation of concepts, products, or procedures that inspire others to do the same (Akhter et al., 2022). It is the process through which individuals generate and implement novel ideas within established systems through social interactions (Mancha & Shankaranarayanan, 2020). The significance and necessity of business innovation are widely recognized, as entrepreneurs often rely on it to find solutions, generate ideas, and overcome challenges. Studies in the digital domain have consistently shown that innovativeness is the primary predictor of digital entrepreneurship success and is strongly correlated with such success (Mancha & Shankaranarayanan, 2020; Upadhyay et al., 2022).

An individual's level of innovativeness can be assessed by their speed of adopting new ideas compared to others within their organization (Abubakre et al., 2020). Innovators exhibit behaviors such as extensive research and are less reliant on peer opinions to validate their findings, as highlighted by Akhter et al. (2022). Digital entrepreneurship, built upon new platforms and communication and information technology, relies on these innovations as its foundation (Abubakre et al., 2020). By leveraging state-of-the-art internet devices, digital entrepreneurs create new ventures and modernize traditional businesses (Jih & Hung, 2020). The term "digital" or "online" entrepreneur refers to a specific subset of the business world where traditional analog processes have been transformed into digital ones (Lee et al., 2020). Digital entrepreneurship seeks to revolutionize traditional business models through the utilization of technology. Entrepreneurship itself is characterized by the willingness to establish one's own business, encompassing behavior traits, mental health, and is considered the most influential and reliable predictor of an entrepreneur's future actions (Mancha & Shankaranarayanan, 2020; Reddy et al., 2022; Yanto et al., 2022). Based on the above discussion, it is hypothesized that

Hypothesis 4: Innovativeness significantly impacts digital entrepreneurship success.

2.5. Mediating Role of Innovativeness

Innovativeness plays a crucial role in the success of digital entrepreneurship, acting as a mediator between various factors such as digital capability, digital orientation, digital literacy, and digital entrepreneurship success. Innovativeness involves generating and realizing novel concepts, transforming them into marketable products and services (Mugiono et al., 2021). It encompasses the willingness to embrace change on one's own terms and the ability to inspire others to do the same (Abubakre et al., 2020). The process of innovation involves gradually creating and implementing novel ideas within an established economic framework (Akhter et al., 2022).

Recognizing the significance of innovation, business leaders rely on it to find solutions, generate ideas, and address challenges. Previous studies have explored the role of innovativeness in various domains, including blogs, social networks, customer satisfaction, and wireless operators (Kurczewska et al., 2020; Mancha & Shankaranarayanan, 2020; Gupta et al., 2018; Mugiono et al., 2021). In the context of digital entrepreneurship, understanding how the degree of innovativeness among digital entrepreneurs affects their chances of success is crucial (Akhter et al., 2022; Mancha & Shankaranarayanan, 2020; Sankowska, 2016; Upadhyay et al., 2022). In this study, "innovativeness" refers to the willingness of digital entrepreneurs to adopt cutting-edge technological developments in their professional lives. The success of architecture and interior design entrepreneurs in Taiwan is

influenced by the prevalence of innovation in the industry. Innovation enables businesses to offer superior deals compared to competitors, attract and retain more customers, and expand their domestic and international customer base (Khin & Ho, 2018; Zhen et al., 2021). Innovations can open up new markets and significantly increase sales. Additionally, innovative approaches in business operations lead to novel methods for achieving improved efficiency (Upadhyay et al., 2022; Young et al., 2020).

Digital entrepreneurs in the fields of architecture and interior design exemplify digital innovativeness, focusing on developing innovative tools to facilitate the digitization of various industries such as finance, medicine, manufacturing, and retail (Mancha & Shankaranarayanan, 2020; Upadhyay et al., 2022). As the demand for advanced digital technologies continues to rise, innovativeness becomes increasingly crucial alongside the process of modernization. It is worth noting that previous research by Abubakre et al. (2020) and Akhter et al. (2022) has primarily focused on conventional industries rather than architecture and interior design entrepreneurs. This study takes a unique approach by analyzing how architectural and interior design entrepreneurs adapt their products and services into innovative online offerings and ideas, impacting traditional retailers, products, activities, and even creating new businesses.

In conclusion, the hypothesis proposes that innovativeness mediates the relationship between digital capability, digital orientation, digital literacy, and digital entrepreneurship success. By considering the mediating role of innovativeness, this study aims to provide insights into how these factors collectively contribute to the success of digital entrepreneurship in the field of Taiwan architecture and interior design.

Hypothesis 5: Innovativeness mediates the impact between digital capability, digital orientation, digital literacy, and digital entrepreneurship success

The following conceptual framework is used to guide the study, see figure 1.

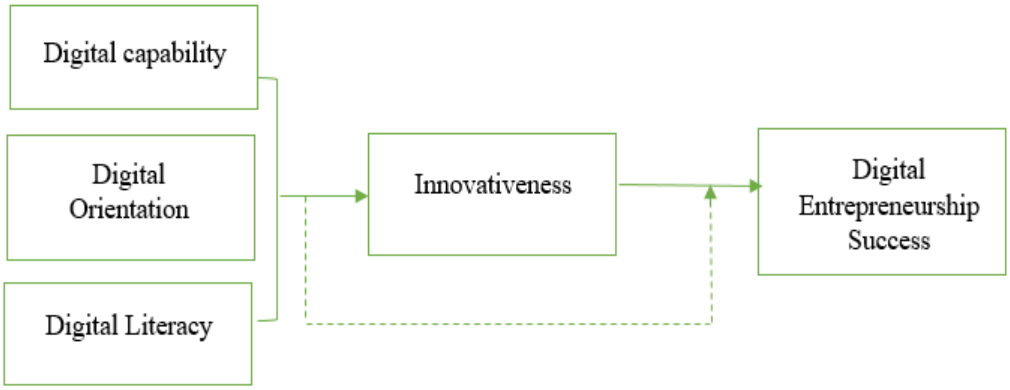

Figure 1: Conceptual Framework

3. Research Methodology

Dynamic capability theory and resource-based theory provided the theoretical grounding for constructing the conceptual framework and developing hypotheses in this study. The research focused on Taiwanese architects and interior designers, examining their digital literacy, innovativeness, and business acumen to ensure continued success in an evolving digital landscape. Entrepreneurship's importance to national economies is increasingly recognized, leading to the establishment of platforms and organizations at various levels to promote entrepreneurship. The study employed a non-probability sampling method based on a purposive sample strategy, considering the scope and objectives of the investigation.

The participants in the study were architectural and interior design entrepreneurs in Taiwan. Contact information for 450 individuals was obtained, and invitation letters along with survey questionnaires were sent to them. The survey was conducted in English, and respondents were asked to indicate their language proficiency in the cover letter. Confidentiality was maintained by only reporting summary statistics without disclosing individual respondent data. Ultimately, 310 respondents who were fluent in English and willing to complete the survey agreed to participate. They were given a two-week period to fill out the survey and return it via email, with follow-ups conducted afterwards. The data collection process spanned six months, and after receiving 293 completed surveys. Overall, 218 questionnaires were deemed usable due to some incomplete responses, representing a 48% response rate from the initial sample of 450 Taiwanese architecture and interior design business entrepreneurs. The convenient and purposeful sampling strategy was employed to enhance the generalizability of the results compared to random sampling. Statistical analyses and hypothesis evaluation were conducted using PLS-SEM Smart PLS 3.

The measurement scale utilized in the study consisted of a 23-item questionnaire, examining digital knowledge, innovativeness, and digital entrepreneurship success among Taiwanese architecture and interior design entrepreneurs. The items were adapted from previous studies and assessed using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The specific scales used were: digital capability (5 items), digital orientation (4 items), digital literacy (5 items), innovativeness (4 items), and digital entrepreneurship success (5 items). In summary, this methodology employed theoretical frameworks, targeted Taiwanese architecture and interior design entrepreneurs, utilized a purposive sampling method, and employed a comprehensive measurement scale to analyze digital knowledge, innovativeness, and digital entrepreneurship success in the context of the study.

4. Result

4.1. Demographic profile

In Table 1, it can be observed that 50% of male architecture and interior design entrepreneurs in Taiwan were in the age group of 25-35, while the remaining 50% were above 35. Among the respondents, 45% held a BS qualification, whereas 55% had an MS/Ph.D. qualification. The gender distribution showed that 55% were male entrepreneurs, while 45% were female entrepreneurs in the fields of architecture and interior design. Regarding specialization, 48% of the respondents were focused on architectural design, and 52% were involved in interior design.

Table 1: Demographic profile

Demography	Description	No. of Responses	%
Gender	Male	120	55
	Female	98	45
Age	25-35	110	50
	Above 35	108	50
Qualification	BS	99	45
	MS/PhD	119	55
Specialization	Architecture design	105	48
	Interior design	113	52

In summary, Table 1 displays the demographic profile of the sample, including gender, age, qualification, and specialization of Taiwanese architecture and interior design entrepreneurs.

4.2. Measurement model

Before analyzing the data from 218 architects and interior designers, PLS-SEM was used to check the collected information's factor loadings, validity, and reliability (Hair Jr et al., 2020). Test items for the PLS measurement model were assessed for composite reliability (CR), Cronbach's alpha (CA), and average variance extracted (AVE) (Fornell & Larcker, 1981) and found within the benchmark, as shown in Table.

Table 2: Composite reliability, Cronbach's Alpha and AVE values

Constructs	Alpha	CR	AVE
Digital capability	0.826	0.878	0.592
Digital entrepreneurship success	0.868	0.904	0.655
Digital literacy	0.760	0.837	0.513
Digital orientation	0.755	0.719	0.517
Innovativeness	0.772	0.803	0.507

"Note: CR=composite reliability; AVE=average variance extracted; CA= Cronbach's Alpha"

Discriminant validity (see table 3) was also assessed to ensure the distinctiveness of the latent variables (Fornell & Larcker, 1981). The HTMT (heterotrait-monotrait ratio) values were calculated, and all values were found to be below 1, indicating discriminant validity (Hair Jr et al., 2020). The HTMT values between the constructs were as follows: digital capability and digital entrepreneurship success (0.770), digital capability and digital literacy (0.335), digital capability and digital orientation (0.454), digital capability and innovativeness (0.410), digital entrepreneurship success and digital literacy (0.595), digital entrepreneurship success and digital orientation (0.754), digital entrepreneurship success and innovativeness (0.564), digital literacy and digital orientation (0.219), digital literacy and innovativeness (0.207), and digital orientation and innovativeness (0.447).

Table 3: Discriminant validity

	DC	DES	DL	DO	I
Digital capability	0.770				
Digital entrepreneurship success	0.595	0.769			
Digital literacy	0.335	0.219	0.757		
Digital orientation	0.454	0.754	0.334	0.746	
Innovativeness	0.410	0.564	0.207	0.447	0.712

Furthermore, the determination coefficients (R2) were calculated to determine the amount of variance explained by the independent variables in predicting the dependent variables (Hair Jr et al., 2020). In this study, the R2 values for digital entrepreneurship success and innovativeness were found to be 0.318 and 0.254, respectively as shown in Table 4.

Table 4: Assessment of R square

	R^2
Digital entrepreneurship success	0.318
Innovativeness	0.254

Overall, the measurement model demonstrated good reliability, validity, and discriminant validity, confirming the robustness of the constructs used in the study (Hair Jr et al., 2020; Fornell & Larcker, 1981).

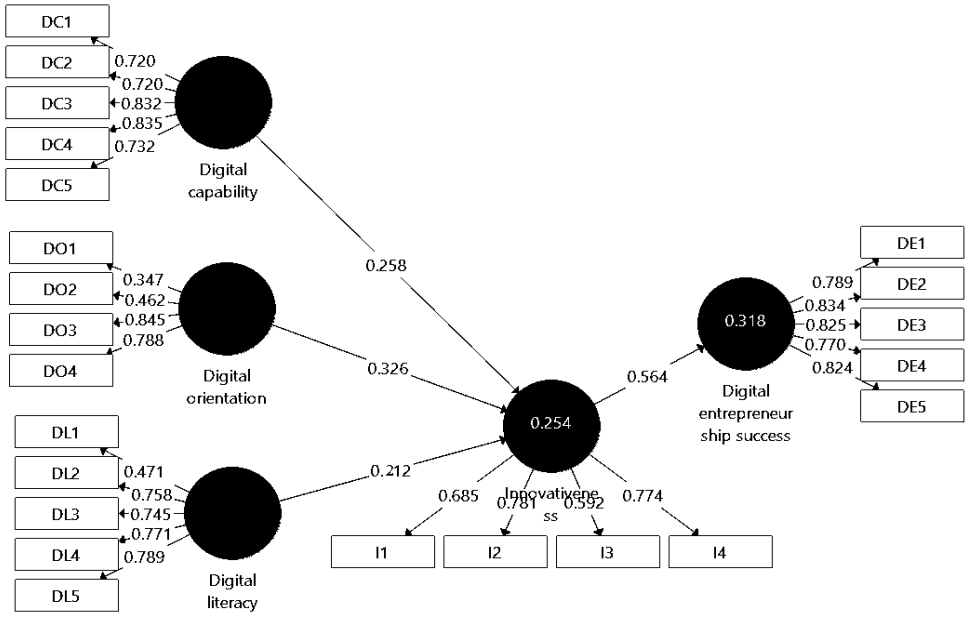

Figure 2: Structural relationship findings

4.3. Structural Equation Model

The analysis focused on examining the relationships among digital knowledge, innovativeness, and digital entrepreneurship success in the context of Taiwan architecture and interior design entrepreneurs, while incorporating dynamic capability theory and resource-based theory. The results revealed several significant relationships. Firstly, a significant relationship was found between digital capability and innovativeness ($\beta = 0.258$, $t = 3.382$, $p = 0.001$), indicating that higher levels of digital capability positively influenced innovativeness among entrepreneurs. Therefore, Hypothesis 1 (H1) was supported. Secondly, a significant relationship was observed between digital literacy and innovativeness ($\beta = 0.212$, $t = 3.206$, $p = 0.007$), indicating that greater digital literacy contributed to higher levels of innovativeness. Thus, Hypothesis 2 (H2) was supported.

Furthermore, the analysis indicated a significant relationship between digital orientation and innovativeness ($\beta = 0.326$, $t = 5.188$, $p = 0.000$). This suggests that a stronger inclination towards digital orientation among entrepreneurs was associated with increased innovativeness. Therefore, Hypothesis 3 (H3) was supported. Finally, the relationship between innovativeness and digital.

Entrepreneurship success was found to be significant ($\beta = 0.564$, $t = 11.089$, $p = 0.000$). This implies that higher levels of innovativeness positively influenced the success of digital entrepreneurship endeavors. Hence, Hypothesis 4 (H4) was supported.

Table 5: Direct Relation

		Original Sample	T Statistics	P Values	Decision
H!	Digital capability -> Innovativeness	0.258	3.382	0.001	Accepted
H2	Digital literacy -> Innovativeness	0.212	3.206	0.007	Accepted
H3	Digital orientation -> Innovativeness	0.326	5.188	0.000	Accepted
H4	Innovativeness -> Digital entrepreneurship success	0.564	11.089	0.000	Accepted

The findings from the structural model analysis provide empirical evidence supporting the relationships between digital capability, digital literacy, digital orientation, innovativeness, and digital entrepreneurship success among Taiwan architecture and interior design entrepreneurs. These results highlight the importance of digital knowledge and innovativeness in driving entrepreneurial success in the digital era.

4.4. Mediating Effect

The mediating effect of innovativeness was examined to determine its influence on the relationship between the independent variables (digital capability, digital literacy, and digital orientation) and the dependent variable (digital entrepreneurship success). Mediation refers to the process in which an intermediate variable mediates or explains the relationship between two other variables (Hair Jr et al., 2021).

The results revealed that the association between digital capability and digital entrepreneurship success remained significant even after incorporating innovativeness as a mediating variable (β = 0.245, t = 2.943, p < 0.003). This suggests that innovativeness partially mediated the relationship between digital capability and digital entrepreneurship success. Similarly, the association between digital literacy and digital entrepreneurship success remained significant when considering innovativeness as a mediating variable (β = 0.107, t = 2.206, p < 0.007). This indicates that innovativeness played a mediating role in the relationship between digital literacy and digital entrepreneurship success. Furthermore, the association between digital orientation and digital entrepreneurship success remained significant with the inclusion of innovativeness as a mediating variable (β = 0.184, t = 4.171, p < 0.000). This suggests that innovativeness partially mediated the relationship between digital orientation and digital entrepreneurship success.

These findings demonstrate that innovativeness acted as a significant mediator in the relationships between digital capability, digital literacy, and digital orientation with digital entrepreneurship success. By influencing the relationship between these variables, innovativeness played a crucial role in explaining the mechanism through which digital knowledge contributes to entrepreneurial success in the context of Taiwan architecture and interior design entrepreneurs.

5. Discussion

The present study examined the relationships between digital knowledge, innovativeness, and digital entrepreneurship success within the architecture and interior design industries in Taiwan. The findings supported each of the hypotheses put forward in this study. This research draws on the author's experience in the field of digital technology and incorporates insights from previous studies on the role of innovativeness in the commercial success of digitally driven architecture and interior design businesses in Taiwan.

The results revealed a significant positive correlation between digital capability and innovativeness (β = 0.258, t = 3.382, p = 0.001). This finding aligns with Chuang and Chiou's (2016) assertion that enhanced digital capabilities and skills are essential resources for fostering innovativeness. Irrespective of the level of technological advancement, companies need to recognize the importance of digital competence in order to strategically plan and utilize digital tools effectively (Chen et al., 2017). Similarly, the analysis demonstrated a significant positive relationship between digital literacy and innovativeness (β = 0.212, t = 3.206, p = 0.007). Proficiency in using technology is critical for business growth and overcoming various challenges. Strengthening computer literacy among Taiwanese architects and interior designers equips them with the necessary resources to adapt their businesses to incorporate the latest advancements in digital technology. Government agencies, professional organizations, educational institutions, and other relevant entities can provide guidance and support to

business owners in Taiwan's architecture and interior design industries to enhance their utilization of digital tools (Khin & Ho, 2018).

Moreover, the results indicated a significant positive correlation between digital orientation and innovativeness ($\beta = 0.326$, $t = 5.188$, $p = 0.000$), confirming hypothesis H3. A digital mindset, characterized by a propensity to embrace new ideas and technologies, is crucial for fostering innovativeness within organizations. Individuals who are more receptive to adopting innovative practices compared to their peers play a key role in driving organizational innovation (Abubakre et al., 2020). Furthermore, the analysis revealed a significant positive association between innovativeness and digital entrepreneurship success ($\beta = 0.564$, $t = 11.089$, $p = 0.000$), supporting hypothesis H4. The ability to generate and implement innovative ideas is vital for entrepreneurial success in the digital era. Managers in the architecture and interior design industries need to stay abreast of the latest innovations, be open to incorporating new knowledge, and swiftly recognize and capitalize on market opportunities (AlMulhim, 2021).

Additionally, when the mediating variable of innovativeness was included in the model, the relationships between digital capability and digital entrepreneurship success, digital literacy and digital entrepreneurship success, and digital orientation and digital entrepreneurship success remained statistically significant ($p < 0.05$). This suggests that innovativeness partially mediates the effects of digital knowledge on digital entrepreneurship success. The integration of digital technologies into business processes can lead to the development of novel approaches for enhancing existing practices (Upadhyay et al., 2022; Young et al., 2020).

In conclusion, this study sheds light on the crucial role of digital knowledge and innovativeness in driving digital entrepreneurship success among entrepreneurs in Taiwan's architecture and interior design industries. The findings underscore the importance of digital capability, digital literacy, and digital orientation in fostering innovativeness, which in turn contributes to entrepreneurial success in the digital landscape. By embracing digital technologies and cultivating an innovative mindset, businesses in this sector can seize new opportunities and enhance their competitive advantage in a rapidly evolving industry.

6. Theoretical, Practical Implication, and Conclusion

Our research contributes to the dynamic capability theory and the resource-based approach, providing a broader theoretical understanding. It demonstrates that digital capabilities have a significant impact on the success of digital entrepreneurship and innovation, beyond employees' familiarity with digital tools. The success of a digital enterprise is influenced by both digital orientation and digital literacy, mediated by innovativeness. Establishing a continuous process of adaptation to the evolving digital landscape can enhance the success of digital entrepreneurship. Furthermore, our study opens up avenues for exploring additional connections between factors that contribute to successful digital entrepreneurship. By assessing the conceptual model, this study adds new knowledge regarding the effects of digital innovativeness on success.

Practical implications are for policymakers, administrators, and decision-makers. It is important to consider previously unexplored factors that may influence the relationship between innovativeness and entrepreneurship success in the architecture and interior design industries in Taiwan. Managers should assess the relevance and status of these factors and make strategic decisions to support the success of digital entrepreneurs. Recognizing the mediating role of innovativeness, managers in the Taiwanese architectural and interior design industries should understand that digital maturity is an ongoing process that involves procedures and skills. This understanding will enable organizations to provide value in dynamic and fast-paced digital environments. Managers should also be aware that a certain

level of digital capability is necessary to achieve innovativeness from digital literacy and digital orientation. However, it is crucial for managers to exercise selectivity and gain a deep understanding when choosing which industry and market to digitize. This requires the development of a systematic and reliable procedure for the continuous adoption of digital technology.

It is concluded that entrepreneurs need diverse skills related to analysis, understanding, and application to effectively leverage technological resources. Digital infrastructure is essential for innovation to thrive and for future businesses to succeed. Managers who are well-versed in the concepts outlined in the proposed research model will be better equipped to plan, execute, and adjust the strategies of digital entrepreneurs. Understanding the critical factors that influence digital entrepreneur success allows digital entrepreneurs to adapt their actions and strategies to the specific factors impacting their digitalized work. In response to the increasing global interdependence, this study contributes to the development of more nuanced theoretical frameworks for understanding the effects of innovation. Companies in related fields can benefit from the study by emphasizing the need to foster digital orientation and strengthen capacities in handling digital technology to drive innovation. Identifying the driving forces and impact of innovativeness on successful digital entrepreneurship will encourage businesses to embrace technological opportunities, ultimately enhancing both innovativeness and financial success. By understanding the potential benefits of innovation and how to foster it, businesses are more likely to embrace and leverage innovation effectively.

6.1. Limitations and future Research directions

Despite the valuable insights gained from this study, there are limitations that should be acknowledged. The study primarily relied on quantitative and closed-ended questionnaires, limiting the depth of understanding. Future research should explore the moderating role of innovation in relation to other factors affecting digital aptitude, digital literacy, digital orientation, and the success of Taiwanese architects and interior designers as digital entrepreneurs. Further empirical quantitative studies are needed to validate the findings and delve deeper into the impact of digital orientation on digital entrepreneur success. Additionally, more research is required to provide guidance on planning and organizing digital literacy initiatives for small businesses. Studying the relative importance of various factors in the success of digital entrepreneurs from diverse backgrounds and analyzing the differences in digital mindsets and skills can offer a better understanding of their contributions to the rise of digital entrepreneurship. Researchers in the future can also explore different forms of innovativeness to drive businesses forward.

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Appendix

Variables	Items	source
Digital capability	1. Acquiring important digital technologies. 2. Identifying new digital opportunities. 3. Responding to digital transformation. 4. Mastering the state-of-the-art digital technologies. 5. Developing innovative products/service/process using digital technology	(Khin & Ho, 2018)
Digital orientation	1. We are committed to use digital technologies in developing our new solutions. 2. Our solutions have superior digital technology. 3. New digital technology is readily accepted in our organization. 4. We always look out for opportunities to use digital technology in our innovation.	(Khin & Ho, 2018)
Digital literacy	1. Using Google to search for topics. 2. Having an email account. 3. Using of office applications. 4. Resolving basic technical equipment problems. 5. Having and using social media accounts	(Reddy et al., 2022)
Innovativeness	1. Our process innovativeness related to implementation of new and significantly new ways of production and distribution. 2. Our organizational innovativeness related to implementation of new organizational methods concerning business practices, organization of job and business relations. 3. Our product innovativeness concerning introduction of products/services, which are new or considerably new with respect to their features or intended application. 4. Our marketing innovativeness with regard to implementing new methods of marketing in terms of significant changes in pattern-designing, product placement, promotion or pricing strategies.	(Sankowska, 2016)
Digital entrepreneurship success	1. Willingness to take risks. 2. Knowledge and skills with regard to the enterprise. 3. Knowledge of competitors. 4. High quality work enjoys priority. 5. Positive attitude and approach.	(Nieuwenhuizen & Kroon, 2002)