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IDENTIFYING FACTORS SHAPING DIGITAL ENTREPRENEURSHIP INTENTION IN GCC COUNTRIES

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ABSTRACT

The GCC nations have recently adopted a new economic development strategy focused on decreasing their reliance on oil and encouraging diversification through investment in non-oil sectors. The digital economy stands out as a promising emerging sector with the potential to drive economic diversification, increase added value, and generate job opportunities. Recognizing its importance, GCC countries are supporting and promoting digital entrepreneurship activities to develop the digital sector. This research examines the factors affecting the intention to engage in digital entrepreneurial ventures in GCC countries. To do so, the analysis relies on primary data collected through a questionnaire distributed to a sample of 229 graduates in management, IT, and computer sciences from the Gulf region, all of whom have expertise in digital entrepreneurship. The study employs the Structural Equation Modeling (SEM) and identifies five key factors influencing the intention to pursue digital entrepreneurship and develop the digital economy. These factors include literacy and digital culture, education and training in entrepreneurship and the digital economy, knowledge of digital entrepreneurship, digital infrastructure, and government policies and support mechanisms for the digital business sector. This research provides policymakers in the GCC region with recommendations, such as fostering a broader digital culture within society and promoting education and training programs focused on digital entrepreneurship. These insights are designed to support Gulf countries in diversifying their economies, enhancing regional competitiveness, and positioning themselves as hubs for digital innovation in the global marketplace.

Keywords: *Entrepreneurship, Digital entrepreneurship, Digital economy, Structural equation modeling, Gulf Cooperation Council*

1. INTRODUCTION

Gulf Cooperation Council (GCC) nations have recently intensified efforts to lessen their dependence on oil as a dominant source of GDP by diversifying their economies. Diversifying the economy requires the development of new productive sectors that contribute to increasing economic output and serve as additional drivers for sustainable development in the region. Among these emerging pivotal sectors, the digital economy stands out as one of the most critical sectors, which may play an important role in enhancing the growth of non-oil GDP, thereby

building a sustainable economy (Zhang et al., 2022; Xu et al., 2025). The digital economy is defined by the OECD (2020) as "*all economic activity reliant on, or significantly enhanced by the use of digital inputs.*" (OECD, 2020, p. 5). The growth of this sector notably depends on various factors, with the expansion of digital entrepreneurship being a crucial driver of the digital economy. GCC countries have adopted digital innovation and emerging technologies (Al-Hajri et al., 2024; Asmyatullin and Glavina, 2025; Cordova et al., 2025), which may play a significant role in promoting digital entrepreneurship. These nations have fostered a supportive environment for digital entrepreneurs by establishing institutions such as the Knowledge Economic City and the Digital Entrepreneurship Center in Saudi Arabia, Oman's Knowledge Oasis, and Qatar Science and Technology Park. These institutions contribute to providing technological services and support for digital entrepreneurship. Additionally, the investment environment for digital projects has been enhanced, with legislation enacted to incentivize local and foreign investors to invest in these ventures. GCC countries have also focused on developing their technological and informational infrastructure and have prioritized smart cities, which represent the most prominent geographical spaces for the growth of digital entrepreneurial activities. These measures and initiatives have improved the performance indicators of the digital sector, and the region has experienced a relative increase in digital startups.

The awareness toward establishing digital entrepreneurial ventures has intensified, particularly since the COVID-19 pandemic (Alanzi and Ratten, 2023). Globally, and in the Gulf region specifically, the pandemic accelerated the creation of digital businesses that leverage the advantages of the digital space while accounting for the new environmental changes impacting the economy, linked to the global health crisis (Modgil et al., 2022; Xu et al., 2023; Neffati & Khemiri, 2025). Consequently, the pandemic played a substantial role in accelerating the adoption business models reliant on information technologies (Holl et al., 2024; Lambekova et al., 2025; Ojeleye & Ojeleye, 2024). Consequently, digital entrepreneurship has emerged as the most resilient business model for the current and future landscape, demonstrating its ability to withstand disruptions from pandemics, viral outbreaks, and natural disasters (Yáñez-Valdés et al., 2024; Ratten, 2023; Modgil et al., 2022). Given the significant importance of developing digital entrepreneurship activities to enhance the digital economy, leading to increased GDP growth rates and job creation (Gomes et al., 2022; Wu and Yang, 2022), scholars have concentrated on the determinants of digital entrepreneurship development, i.e., drivers influencing the expansion of digital business ventures (Ladeira et al., 2019: Akhter et al., 2022). Studies have shown that the spread of digital knowledge, the promotion of education in digital entrepreneurship, the presence of supportive policies and the availability of digital infrastructure, are key determinants influencing entrepreneurs' intention toward establishing digital ventures. This contributes to develop the trajectory of the digital economy (Wibowo et al., 2023, 2024; Baskaran et al., 2023; Youssef et al., 2020; Darmanto et al., 2023).

This study addresses a critical topic for economic, social, and digital transformation in the Gulf region by identifying the key factors influencing digital entrepreneurship. Through their strategic visions and national programs, GCC countries aimed to develop the digital economy as a foundation for economic diversification, thereby diminishing their reliance on oil. Therefore, it is essential to guide policymakers about leveraging digital entrepreneurship activities to enhance the digital economy. It is worth mentioning in this context the paramount importance of developing digital entrepreneurship activities to enhance the digital economy for GCC economies, and for numerous compelling reasons. First, the COVID-19 pandemic impacted global business, causing declines in growth rates, jobs, and traditional entrepreneurship activities worldwide (Khan et al., 2021; Liñán and Jaén, 2022). However, it created opportunities for entrepreneurs to explore new economic solutions, necessitating the development of remote

work markets and digital entrepreneurship. The *Digital Progress and Trends Report 2023* by the World Bank (2024) highlights the significant growth in digital entrepreneurship since the pandemic and its leading role in economic recovery globally. Digital ventures have generated new wealth, positively influenced economic growth, and provided additional employment opportunities. Given the importance of this type of entrepreneurship, especially post-pandemic, and the GCC's comparative advantage in high-quality digital infrastructure, studying the factors driving digital entrepreneurship becomes crucial. This will help formulate recommendations and policies to enhance digital ventures, thereby advancing the digital economy and promoting the growth of non-oil GDP. Second, GCC economies have recently pursued a strategic goal of economic diversification by reducing their reliance on oil (Callen et al., 2014; Abdelkawy, 2024). These nations are developing new economic sectors, including the digital economy, to boost non-oil GDP. Digital entrepreneurship involves identifying and exploiting opportunities enabled by digital media and ICTs (Davidson and Vaast, 2010). In addition, digital entrepreneurship focuses on creating or developing innovative digital-based products, production methods, or marketing strategies. Since digital entrepreneurship is a key enabler of the digital economy (Miah et al., 2025), it is vital to study the drivers of digital entrepreneurship activities. This will strengthen the digital economy in the Gulf, positioning it as a strategic sector that contributes to economic diversification, added value, and job creation. Third, the public sector in GCC countries stands out globally for its relatively high compensation and job security (World Bank Group, 2018). Driven by strong family encouragement, the preference for public jobs among highly educated individuals in GCC countries often overshadows opportunities in the private sector or the pursuit of entrepreneurship (Forstenlechner and Rutledge, 2011). This societal preference for public jobs conflicts with the GCC's future economic direction, which prioritizes the private sector, self-employment, and freelancing. Therefore, intensifying studies on entrepreneurship-particularly digital entrepreneurship-is essential to understand its drivers and design effective policies. This will make digital entrepreneurship activities more attractive to individuals compared to public jobs.

Drawing from the previous points, addressing the drivers of digital entrepreneurship holds substantial importance for the GCC economies. The study uses primary data from a questionnaire administered to university graduates in GCC countries with degrees in management and information technology (and related fields), ensuring a sample with relevant knowledge of digital entrepreneurship. The study applies Structural Equation Modeling (SEM), offering a robust capability to explore relationships among a large set of variables. This allows for the identification of key factors affecting the growth of digital entrepreneurship activities, and yielding findings for policy recommendations. This will, in turn, contribute to higher digital GDP, a fundamental factor in boosting overall growth and reducing unemployment in the GCC region.

This research is articulated as follows. Section 2 presents an overview of the theoretical framework, examines existing literature on the determinants of digital entrepreneurial intention, and formulates the hypotheses. The methodological framework is provided in Section 3. In Section 4, the empirical results are presented and analyzed, and Section 5 then discusses the findings. Finally, Section 6 emphasizes the key results, policy implications and future research avenues.

2. LITERATURE REVIEW

2. 1. DIGITAL ENTREPRENEURSHIP

Since the 1970s, many countries have prioritized the private sector in their development strategies (Abdel-Rahman et al., 1989), contributing to the emergence of entrepreneurship, which generally refers to the process of creating new organizations. Entrepreneurship is also defined

as a set of activities involving identifying business opportunities, gathering resources to start a business, and managing it. In the 1990s, the digital revolution led to significant transformations, due to the creation of new form of entrepreneurship that integrates digital technologies and entrepreneurial activities (Zhang et al., 2025). To describe these digitally driven entrepreneurial endeavors, terms such as *internet entrepreneurship*, *cyber entrepreneurship*, and *digital start-ups* were introduced in the 2000s. However, the term *digital entrepreneurship* has become the most widely used (Ridwan et al., 2025; Liu et al., 2025). It reflects technological advancements that have reshaped business practices, leading to the creation of digital goods and services produced through organizations reliant on digital processes for production, marketing, and payment (Miniesy et al., 2022).

The recent literature considers digital entrepreneurship as a subset of traditional entrepreneurship, distinguished by its utilization of digital tools and methods (Hall et al., 2007). The growing interest in digital entrepreneurship since the 2000s stems from its ability to generate new revenues (Soltanifar et al., 2021), thereby impacting positively economic growth and employment (Sahut et al., 2021). It has become a cornerstone for new ventures in countries pursuing digital transformation strategies and aiming to strengthen their digital economies. The conceptualization of digital entrepreneurship has been a subject of inquiry for both international organizations and scholars. For instance, the OECD (2019) defines it as entrepreneurship that leverages new information and communication technologies (ICTs), focusing on ICT-supported products, processes, and markets. The European Union (2016) describes digital entrepreneurship as ventures that use digital technologies to improve business processes, innovate business models, or improve customer engagement. Scholars like Kollmann (2006) emphasize that digital entrepreneurship involves establishing innovative businesses using digital economy tools such as AI, blockchain, and big data to deliver value-driven digital products and services. Hull et al. (2007) categorize digital entrepreneurship into three categories based on digital integration. The first type is represented by small digital entrepreneurial activities, which are traditional entrepreneurial projects and businesses that take advantage of the digital space by using, for example, an e-commerce site or interacting with stakeholders through the use of e-platforms, as well as working through remote work groups. The second type is related to medium-sized digital entrepreneurship, which are businesses that use a digital infrastructure to market their products and services primarily through digital distribution channels, while the third type is represented by large digital entrepreneurial activities, which rely primarily on the digital space for all their functions related to production, marketing, distribution, and payment and collection operations. According to Zaheer et al. (2019), digital entrepreneurship includes the creation of digital start-ups, either as entirely new ventures or as initiatives within existing organizations. In conclusion, digital entrepreneurship encompasses both novel and existing business activities transformed by digital entrepreneurs using modern technologies. This transformation aims to create innovations primarily in digital services, operational methods (through digitization), marketing (leveraging digital platforms), and organizational structures (by digitizing communication and coordination).

2. 2. FACTORS AFFECTING THE DIGITAL ENTREPRENEURSHIP INTENTION

The technological and informational revolution since the late 1990s spurred the growth of the digital economy, reliant on ICTs (web applications, big data, e-payment, digital platforms) for production, distribution, and innovation (Shao and Wang, 2025). Digital entrepreneurship is key to the advancement of this sector, influencing non-oil GDP and employment (Neffati and Jbir, 2024; Cigu, 2025). A growing literature examined to uncover the determinants that drive entrepreneurs to engage in digital business initiatives, such as digital literacy and societal digital culture, education and training related to digital entrepreneurship, digital infrastructure, and

government policies and support mechanisms (Raji et al. 2024; Wibowo et al. 2023; Baskaran et al.2023; El-Sisi, 2022; Wang et al. 2022; von Briel et al., 2018). In a systematic literature review, Berman et al. (2024) identified 45 unique drivers of digital entrepreneurship, spanning individual, organizational, and national factors. Yáñez-Valdés et al. (2024) also conducted an analysis of 208 articles on the drivers of digital entrepreneurship, revealing that technological progress and digital knowledge are significant determinants in fostering digital entrepreneurial. Furthermore, Duong et al. (2024) examined the drivers of digital entrepreneurial intentions among 1,326 MBA students in Vietnam, employing the Theory of Planned Behavior. Their findings highlight the critical role of individual digital competencies in fostering digital entrepreneurship. Furthermore, Ademi et al. (2025) explored factors affecting a sample of 154 participants from North Macedonia. The analysis suggested that subjective norms and attitude toward behaviour significantly influence digital entrepreneurship intention.

2. 2. 1. DIGITAL LITERACY AND CULTURE

Recent literature defines digital literacy as the capacity to adapt to evolving digital technologies, utilize them, interact with them, and leverage them in social and economic domains (Pangrazio et al., 2020). Walton (2016) defines it as the capacity to locate, evaluate, use, share, and create specific content using ICTs and internet. According to Kozanoglu and Abedin (2021), digital literacy encompasses a range of capabilities that individuals or social groups utilize when engaging with digital technologies. Digital literacy and the spread of digital culture have evolved to denote the ease of navigating and benefiting from the digital space (Reyna et al., 2018). Various studies indicate that digital literacy and the proliferation of digital culture and knowledge are among the most critical factors driving the development of digital entrepreneurial activities in contemporary societies. For example, El-Sisi (2022) revealed a significant association between digital literacy and the intention to pursue digital entrepreneurial projects in Egypt. These findings align with those of other recent studies on the topic. For instance, Ip (2024) concluded that digital literacy and the prevalence of community digital culture affect entrepreneurial intentions in Taiwan. Recently, Zeynalov and Doğantan (2025) investigated the impact of various factors, including digital literacy skills, on digital entrepreneurial intentions, using Structural Equation Modeling (SEM). The analysis conducted on a sample of 382 undergraduate and associate degree students in tourism reveals the importance oof digital literacy

To summarize, recent research highlights digital literacy and digital culture as crucial drivers of the intention to pursue digital entrepreneurship. Based on these results, the hypothesis regarding the linkage between digital literacy, community digital culture, and the intention to pursue digital entrepreneurship can be formulated as follows:

H1: *If individuals have higher levels of digital literacy and culture, then their intention to engage in digital entrepreneurship will increase.*

2. 2. 2. DIGITAL ENTREPRENEURSHIP EDUCATION

Recent studies on entrepreneurship generally indicate that entrepreneurial education acquired by individuals through various educational pathways significantly influences the development of their entrepreneurial intentions (Bae et al., 2014; Piperopoulos et al., 2015; Udekwe and Iwu, 2024; Listyaningsih et al., 2024). Lüthje and Franke (2002) found that entrepreneurship education allows developing knowledge, skill set, and entrepreneurial attitude required for successful venture creation. Voda and Florea (2019) supported this conclusion, emphasizing that entrepreneurial education improves students' entrepreneurial skills and capabilities. Wang et al. (2020) indicated that digital entrepreneurship education shapes students' intentions to in-

vest in digital entrepreneurships. Additionally, Wibowo et al. (2023, 2024) demonstrated that advancing digital entrepreneurship education promotes the intention of digital entrepreneurship. This finding was echoed by Pham et al. (2023), who underscored that digital entrepreneurship is positively affected by digital entrepreneurship education. Finally, Singh et al. (2024) revealed that digital entrepreneurial education and training practices improve digital entrepreneurship intention in India. Specifically, the results indicated that education is a key determinant of entrepreneurial competence, which motivates individuals to pursue the establishment of digital entrepreneurial ventures. Based on the outcomes of previous studies, the study proposes the following hypothesis:

H2: *If individuals receive education and training in digital entrepreneurship, then their intention to engage in digital entrepreneurship will increase.*

2. 2. 3. DIGITAL ENTREPRENEURSHIP KNOWLEDGE

Digital entrepreneurship knowledge refers to the set of knowledge related to establishing entrepreneurial projects (Wibowo et al., 2023; Darmanto et al., 2023). This knowledge includes legal procedures for launching digital ventures and administrative knowledge related to resource provision, marketing management, and other management functions specific to digital entrepreneurial ventures (Yao et al., 2021). The prior literature suggested a strong association between entrepreneurial knowledge and entrepreneurial intention (Richter et al., 2017). For example, Younis et al. (2020) emphasized that individuals' knowledge about launching new businesses, such as identifying opportunities and markets, securing funding, and accessing support, significantly influences their intention to digital entrepreneurial. Xie et al. (2018) further showed that entrepreneurial knowledge influences in startup creation and the growth of digital ventures.

Following this trend, other studies have highlighted that entrepreneurial knowledge supports digital entrepreneurs in managing their businesses, negotiating, developing products, and assessing risks (Xie et al., 2018; Shane and Nicolaou, 2013). Adequate digital knowledge empowers entrepreneurs to create new products that follow the evolving market preference and demand (Cheng et al., 2025). It also makes digital entrepreneurs more flexible in seizing opportunities, embracing change, and optimally utilizing resources. Generally, the digital knowledge is considered a fundamental and strategic resource for enhancing digital startups (Richter et al., 2017). Some studies suggested that individuals who acquire digital knowledge exhibit higher confidence in establishing digital businesses (Wang et al., 2022; Darmanto et al., 2023). Based on the previous discussion, this research puts forward the following hypothesis:

H3: *If individuals possess greater digital entrepreneurship knowledge, then their intention to engage in digital entrepreneurship will increase.*

2. 2. 4. DIGITAL INFRASTRUCTURE

Digital infrastructure represents one of the most critical components of digital entrepreneurship. Digital infrastructure refers to technology-based networks, including the Internet of Things, digital platforms (e.g., e-commerce platforms), and other digital technologies (Giest, 2025). These technologies form the foundational elements of the digital entrepreneurship ecosystem. Recent studies emphasize that digital entrepreneurship fundamentally relies on digital infrastructure (Li et al., 2024). For example, the European Commission underscores the necessity of intensive use of digital technology-related infrastructure. Steininger (2019) highlighted that digital infrastructure supporting social media, digital platforms, big data analytics, and 3D printing significantly encourages entrepreneurs to launch digital ventures and leverage the advantages of the digital space. Similarly, Baskaran et al. (2023) emphasized the importance of advanced digital infrastructure in boosting digital entrepreneurship activities. Li et al. (2024) demonstrated that

digital infrastructure enhances business environment components supportive of entrepreneurship, thereby serving as a key factor in stimulating individual digital entrepreneurship in China. This study concluded that developing digital infrastructure accelerates the pace of digital start-up creation by fostering the replication of successful ventures, improving forecasting processes, and enabling flexible work arrangements. Das and Das (2022) examined the linkage between digital infrastructure, online government services, and the ease of establishing new businesses across 200 countries during 2002–2010. The results revealed that advanced digital infrastructure enhances the efficiency of online government services by diminishing procedures and costs to start a new business, thereby facilitating digital entrepreneurial initiatives. These findings align with Ha (2024), which analyzed the influence of digital government service quality on the ease of launching new businesses in the European Union during 2012–2019. The study found that digital infrastructure development improves online government service quality and positively influences entrepreneurship density. Overall, previous studies conclude a positive linkage between digital infrastructure and digital entrepreneurship, leading to the following hypothesis:

H4: *If individuals have access to advanced digital infrastructure, then their intention to engage in digital entrepreneurship will increase.*

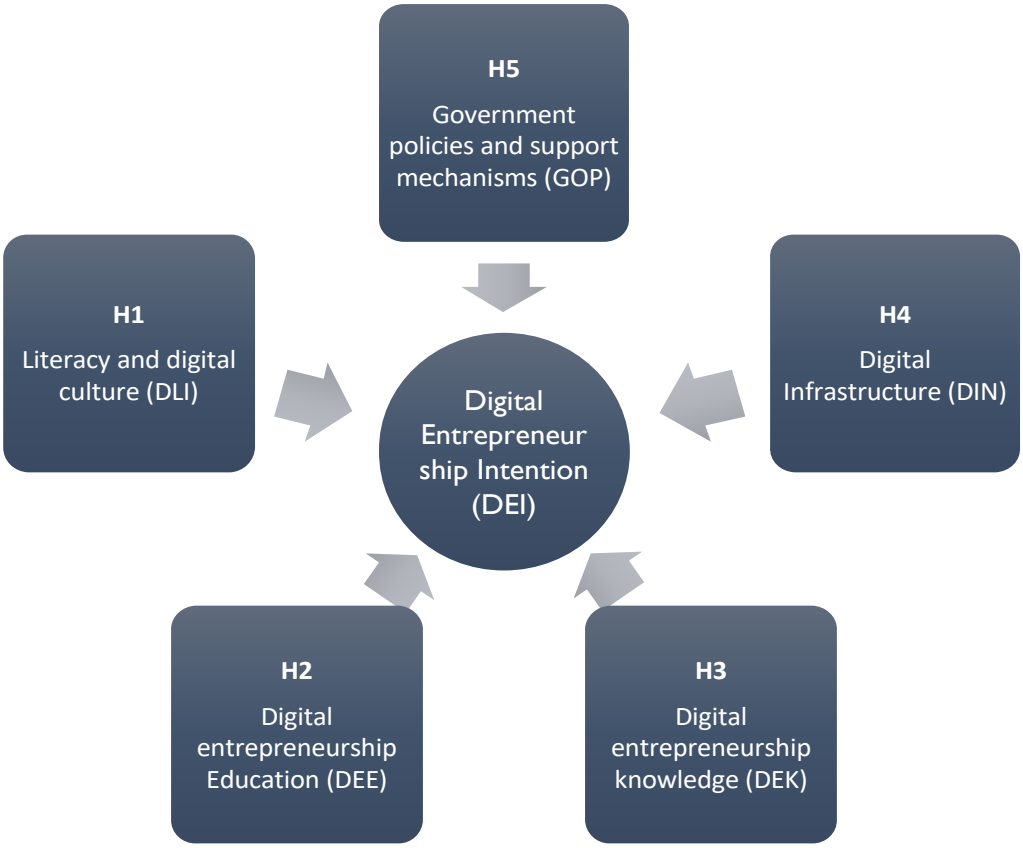
2. 2. 5. GOVERNMENT POLICIES AND SUPPORT MECHANISMS

In the rapidly evolving digital transformation era, government support plays a vital role in stimulating venture creation (Gan et al., 2023). Recent studies suggest that the presence/absence of institutional incentives and support for the digital economy can act as either driver/barriers to decisions regarding launching entrepreneurial ventures in digital technology fields (Gallego Cossio et al., 2025). The digital business environment is shaped by digital transformation policies and government support to develop the digital economy (Yousef et al., 2020). For example, Raji et al. (2024) suggested that government-backed funding initiatives, such as loans and grants for small business management, play a pivotal role in supporting both traditional and digital SMEs. Tax incentives and financial subsidies encourage entrepreneurs to engage in entrepreneurial activities broadly. A recent study by Klein and Braido (2024) on digital entrepreneurship in Brazil emphasized the importance of government policies in advancing this sector, such as prioritizing public spending on IT and communications infrastructure. The study also focused on the role of policies in reducing taxes, improving administrative service governance (e.g., streamlining import procedures for digital components and connectivity tools), and simplifying legislation related to digital innovations and digital businesses. This leads to the following hypothesis:

H5: *If government policies and support mechanisms for the digital business sector are in place, then individuals' intention to engage in digital entrepreneurship will increase.*

The conceptual model presented in Figure 1 identifies five key factors that influence Digital Entrepreneurship Intention (DEI): Literacy and Digital Culture (DLI), Digital Entrepreneurship Education (DEE), Digital Entrepreneurship Knowledge (DEK), Digital Infrastructure (DIN), and Government Policies and Support Mechanisms (GOP). Each of these constructs is hypothesized to have a direct effect on DEI, reflecting the complex and multidimensional nature of entrepreneurial intention in the digital context. By incorporating both individual-level determinants, such as education, knowledge, and digital literacy, and broader systemic factors, such as technological infrastructure and governmental support, the model provides a holistic framework for understanding the factors influencing digital entrepreneurial intentions. This integrative perspective is particularly relevant to GCC countries, where rapid digital transformation, strategic national visions, and supportive innovation policies are reshaping the entrepreneurial landscape.

Figure 1. Conceptual framework



Source: Authors' elaboration

3. RESEARCH METHODOLOGY

3. 1. ESTIMATION METHOD

The simplified model in Figure 1 shows that the intention to set up digital entrepreneurial projects in the GCC countries is influenced by five main factors associated with digital literacy, the spread of digital culture in society, educational and training programs directed at digital entrepreneurship, digital knowledge, digital infrastructure, and government policies and support mechanisms related to digital business. To assess the influence of the aforementioned factors on digital entrepreneurship intention, this study uses the Structural Equation Modeling (SEM). This method is chosen because of its numerous advantages, including its ability to investigate complex linkages among variables simultaneously and consider for measurement errors (Stoffels et al., 2023; Byrne, 2013; Hancock et al., 2019). SEM is also used to check the reliability and validity of questionnaire dimensions and items, examine causal relationships between variables. In addition, it controls measurement errors by eliminating items that inaccurately represent specific constructs, and test study hypotheses. The SEM process involves multiple stages: model design, measurement model assessment, structural model assessment, refinement and goodness-of-fit evaluation, and hypothesis testing (Stoffels et al., 2023). The statistical and quantitative investigation was conducted using SEM, with SPSS27 and AMOS27 as the software tools.

3. 2. QUESTIONNAIRE AND MEASUREMENT

This study aims to estimate the impact of factors enhancing the intention toward digital entrepreneurship in GCC countries. It relies on primary data collected via a custom-designed questionnaire distributed to a sample of university graduates in management and information tech-

nology fields across GCC nations (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates). The questionnaire consists of three sections. The first includes demographic information such as country, gender, age, educational level, and major. The second relates to the dependent variable (digital entrepreneurship intention) with measures adapted from Baskaran et al. (2023). The last section includes the set of independent variables. Digital literacy and societal digital culture include five items drawn from El-Sisi (2022), while digital entrepreneurship education includes three items adapted from Wibowo et al. (2023). Knowledge of digital entrepreneurship contains four items and is extracted from Wibowo et al. (2023). The measurement of digital infrastructure, consisting of four items, was adapted from Elshaiekh et al. (2023) and Baskaran et al. (2023). Finally, to measure government policies and support mechanisms, six items were modified from Youssef et al. (2021) and Baskaran et al., (2023). All constructs employed were evaluated using five-point Likert-type scales (1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree).

4. RESULTS AND ANALYSIS

4. 1. SAMPLE

The sample consists of 229 graduates in management, IT, and computer sciences. To ensure equal selection probability among all individuals in the target population, a random sampling technique was utilized. Wolf et al. (2013) noted that a variety of rules of thumb have been proposed in the literature, including minimum sample sizes of 100 or 200, or ratios such as 5 to 10 observations per parameter. Similarly, Kline (2023) suggested that, for structural equation modeling, a minimum sample size of 200 participants is generally required to produce stable parameter estimates and achieve an acceptable overall model fit. These guidelines were fully met in the present study, which considers a sample of 229 graduates in management, IT, and computer sciences. These disciplines were selected due to graduates' baseline familiarity with digital entrepreneurship. Table 1 displays the demographic and educational profile of the sample population.

Table 1. Sample characteristics

Demographic features	Items	Frequency	Share (%)
Country	Saudi Arabia	119	51.96
	United Arab Emirates	36	15.72
	Bahrain	15	6.55
	Qatar	32	13.97
	Oman	27	11.80
Gender	Male	193	84.28
	Female	36	15.72
Age	22-30	165	72.05
	31-45	56	24.45
	> 45	08	3.5
Education level	Bachelor	188	82.10
	Master or higher	41	17.90
Major	Management Sciences (Accounting - Business Administration - Public Administration - Finance - Human Resources Management - Marketing - Supply Chain Management - Management Information Systems....)	143	62.45
	Information Technology (Computer Science - Artificial Intelligence - Technology - Data Analysis ...)	86	37.55
Total		229	100

Source: Authors' elaboration

The results indicate that 51.96% of respondents were from Saudi Arabia, 15.72% from the UAE, 6.55% from Bahrain, 13.97% from Qatar, and 11.80% from Oman, while no responses were obtained from Kuwait. The table also indicates a gender distribution of 84.28% male and 15.72% female respondents. In terms of age, 72.05% of participants were aged between 22 and 30 years, 24.45% were between 32 and 45, and approximately 3.5% were over 45. With reference to the educational level, the table reports that most participants held a Bachelor's degree (82.10%), with the remaining 17.90% holding a Master's degree. Furthermore, 62.45% of respondents were in Management, and 37.55% were in Information Technology.

4. 2. RESULTS OF THE STRUCTURAL EQUATION MODEL

Applying SEM to analyze the association between digital entrepreneurship intention (dependent) and independent variables (digital literacy, digital culture, education/training, knowledge, infrastructure, government support) involves several steps. These steps pertain to evaluating the measurement model, estimation processes, optimization, goodness-of-fit, and hypothesis testing.

4. 2. 1. MEASUREMENT MODEL EVALUATION

The measurement model evaluation phase focuses on verifying the quality of all measurement scales. Cronbach's alpha (α) and Composite Reliability (CR) were initially employed to check the internal consistency and reliability of the scales. Subsequently, Average Variance Extracted (AVE) was computed to evaluate the convergent validity of the items. Finally, discriminant validity of the latent variables was confirmed using the Fornell-Larcker criterion. Tables 2 and 3 display the results of the analysis.

Table 2. Results of the measurement model

Constructs	Items	Loadings	Cronbach's α	CR	AVE
Digital entrepreneurial intention (DEI)					
DEI1	I have an ambition to become a successful digital entrepreneur	0.829	0.905	0.868	0.834
DEI2	I am sure that I will run my own business through the digital space in the future	0.904			
DEI3	I would rather be a digital entrepreneur than work for others	0.882			
DEI4	I will be a digital entrepreneur in 5 years	0.846			
DEI5	I make sure to keep myself updated with the news of successful digital entrepreneurs	0.796			
Literacy and digital culture (DLI)					
DLI1	I have sufficient knowledge to use internet tools	0.892	0.917	0.874	0.846
DLI2	I have a quick response to any changes in digital platforms	0.910			
DLI3	I use the internet to facilitate my work life	0.919			
DLI4	I can create a web page using computer programs	0.813			
DLI5	I use the internet to increase my knowledge	0.791			
Digital entrepreneurship education (DEE)					
DEE1	Digital entrepreneurship education is mostly provided by colleges and universities in my community	0.931	0.924	0.866	0.852
DEE2	Universities pay great attention to digital entrepreneurship education and training	0.933			
DEE3	Universities provide the required knowledge and information related to digital entrepreneurship	0.931			

Constructs	Items	Loadings	Cronbach's α	CR	AVE
Digital entrepreneurial knowledge (DEK)					
DEK1	I have sufficient knowledge of the legal requirements to start a digital entrepreneurship	0.817	0.899	0.842	0.812
DEK2	I can find the financial, material and human resources to start a digital entrepreneurship	0.864			
DEK3	I have sufficient knowledge to manage a digital entrepreneurship	0.907			
DEK4	I have sufficient knowledge in digital marketing for a product/service	0.920			
Digital Infrastructure (DIN)					
DIN1	I am satisfied with the digital infrastructure provided to entrepreneurs	0.859	0.891	0.796	0.804
DIN2	The digital infrastructure resources for entrepreneurship contribute to increasing the income level of entrepreneurs.	0.873			
DIN3	There is integration between the digital infrastructure resources for entrepreneurs with other service providers needed by projects	0.875			
DIN4	The cost of providing digital infrastructure requirements is appropriate	0.869			
Government Support (GOP)					
GOP1	The visions and strategic plans followed provide many opportunities for digital entrepreneurs.	0.745	0.911	0.870	0.829
GOP2	Entrepreneurs are encouraged by a structural system that includes public, private and non-governmental organizations.	0.869			
GOP3	The digitalization of the economy encourages me to become a digital entrepreneur	0.886			
GOP4	The digital world provides many opportunities for digital entrepreneurs	0.854			
GOP5	There is a legal and regulatory system that supports e-commerce in particular and the digital economy in general well	0.832			
GOP6	There is an effective, comprehensive and reliable legal and institutional framework on issues related to digital transactions	0.820			

Source: Authors' elaboration

Table 2 demonstrates the content validity of the questionnaire items adopted in this phase, which will be used in later stages to measure their intended purpose and association with the study's dimensions. Items having factor loadings less than 0.50 were excluded to ensure content validity, retaining only those exceeding the commonly recommended threshold in the literature for adequately representing their underlying constructs (Hair et al., 2014).

Table 3. Discriminant Validity

	DEI	DLI	DEE	DEK	DIN	GOP
DEI	0.913					
DLI	0.7520	0.919				
DEE	0.7330	0.636	0.923			
DEK	0.746	0.659	0.606	0.901		
DIN	0.581	0.417	0.426	0.583	0.89	
GOP	0.707	0.559	0.576	0.581	0.434	0.910

Note: The bold values indicate the square root of AVE

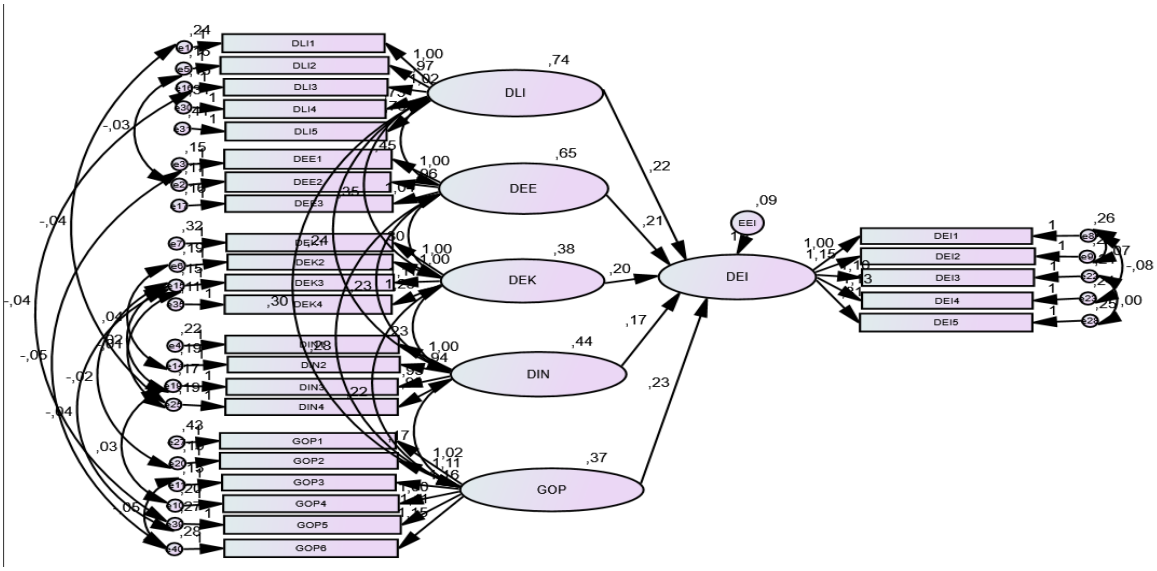
Source: Authors' elaboration

Regarding convergent validity, the outcomes show that all Average Variance Extracted (AVE) values exceed the 0.50 threshold, indicating strong convergent validity across the items. Additionally, the internal consistency reliability analysis reveals that all Cronbach's alpha coefficients exceed the 0.70 threshold, meeting the acceptance criteria established in studies by Taber (2018) and Raharjanti et al. (2022). These findings confirm the high reliability of the used scales. Finally, the Composite Reliability (CR) values further reinforce this, as all estimates surpassed 0.7. Furthermore, Table 3 demonstrates the fulfillment of discriminant validity criteria. The results show that the square root of AVE, representing the correlation of each dimension with itself, exceeds the correlation coefficients between that dimension and other variables. This outcome confirms strong discriminant validity and coherence of the scales employed in the current study. Therefore, these tests affirm the quality of the measures concerning the questionnaire items employed in this research, which focuses on identifying factors influencing digital entrepreneurship intention.

4. 2. 2. ESTIMATION OF THE STRUCTURAL MODEL

The initial stage of structural model estimation focuses on exploring the connections between dependent and independent variables. However, the results of this stage can be enhanced by estimating the final structural model. During this phase, improvements can be made based on the initial model estimates, with AMOS software providing suggestions to refine the model and achieve optimal estimation outcomes. It is worth noting that the final estimation results obtained within the framework of the improvement process are those providing the best quality of fit indicators. Figure 2 depicts the outcomes of estimating the final structural model, while Table 4 summarizes the findings of the quality of fit indicators.

Figure 2. Structural model



Source: Authors' elaboration

Overall, the outcomes indicate that the final results of the structural model are acceptable and efficient, since the quality of the fit indicators falls within the acceptable range.

Table 4. SEM goodness of fit criteria

Indices	Value	Suggested value
CFI	0.990	>0.9 good fit
IFI	0.990	>0.9 good fit
GFI	0.902	>0.9 good fit
NFI	0.937	>0.9 good fit
TLI	0.988	>0.9 good fit
RMSEA	0.028	<0.08 good fit
SRMR	0.031	<0.09 good fit
χ^2/DF	1.176	<0.3 good fit

Source: Authors' elaboration

4. 2. 3. TESTING THE STUDY HYPOTHESES

Once the structural model has been estimated and its adequacy validated through fit indices, the results may be employed to evaluate the different hypotheses. Table 5 presents the results of testing the study hypotheses. The outcomes suggest a significant positive direct effect of digital literacy and the spread of societal digital culture on digital entrepreneurship intention, with an associated coefficient of 0.22. These results recommend accepting the first hypothesis and align with numerous studies emphasizing the pivotal role of digital literacy and digital culture in fostering entrepreneurial activities across various countries, including Egypt (El-Sisi, 2022), Taiwan (Ip, 2024), and others.

Table 5. Results of the hypotheses

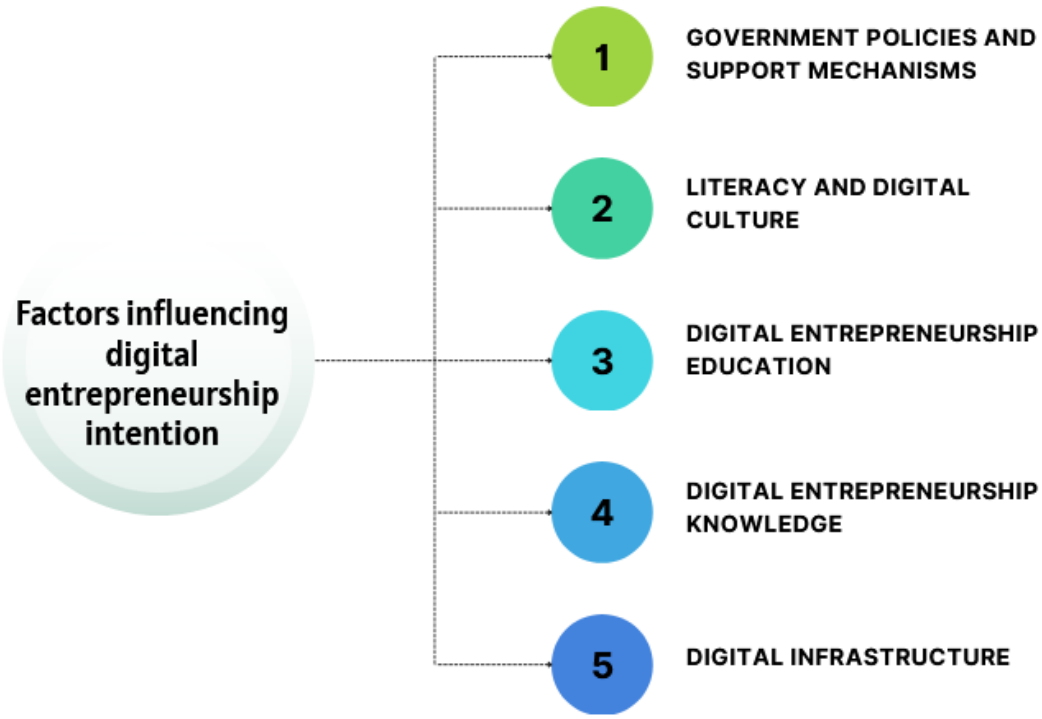
Hypothesis	Independent variable	Dependent variable	Path Relationship	Path Coefficient	p-value	Hypothesis status
H1	DLI	DEI	DLI→ DEI	0.22***	0.000	Accepted
H2	DEE	DEI	DEE→ DEI	0.21***	0.000	Accepted
H3	DEK	DEI	DEK→ DEI	0.20**	0.007	Accepted
H4	DIN	DEI	DIN→ DEI	0.17**	0.001	Accepted
H5	GOP	DEI	GOP→ DEI	0.23***	0.000	Accepted

Source: Authors' elaboration

The second hypothesis was also supported, as estimates revealed a statistically significant positive effect of education and training on digital entrepreneurship, with a path coefficient of 0.21 ($p < 0.001$). This result corroborates prior studies, which emphasize that advancing digital entrepreneurship education and training in universities is a key policy for promoting digital entrepreneurial activities (Al-Mamun et al., 2022; Pham et al., 2023; Wibowo et al., 2023; Singh et al., 2024). Additionally, digital entrepreneurship knowledge positively influenced individuals' intentions to pursue digital ventures, with a path coefficient of 0.20, thereby accepting the third hypothesis. This aligns with studies such as Xie et al. (2018), which found that acquiring digital entrepreneurial skills impacts startup creation and digital business development. Richter et al. (2017) further noted that digital entrepreneurship knowledge serves as a strategic resource for scaling digital startups. Most research in this field underscores that entrepreneurship knowledge aids in managing digital businesses, selecting effective marketing strategies, negotiating risks, and developing innovative digital products. The results also highlighted the positive effects of digital infrastructure quality, government policies, and support mechanisms for the digital business sector, with associated path coefficients of 0.17 and 0.23, respectively, all statistically sig-

nificant at acceptable levels. These findings reinforce recent research emphasizing government investment in technological infrastructure, tax incentives, streamlined regulations, improved governance of administrative services, and funding access as critical drivers of digital entrepreneurship (Youssef et al., 2020; Baskaran et al., 2023; Raji et al., 2024; Klein and Braido, 2024; Hunady et al., 2025). Therefore, it is evident that all factors, including digital literacy, the spread of digital societal culture, education and training in digital entrepreneurship, knowledge of digital entrepreneurship, digital infrastructure, and government support, have positive effects on the intention to establish entrepreneurial projects within the digital sector. The results also showed that the five factors had different degrees of influence on digital entrepreneurship intentions. The effect of these factors can be ranked using the values of the path coefficients, as represented in Figure 3. The figure illustrates the ranking of factors influencing digital entrepreneurship intention based on their path coefficient values. Government policies and support mechanisms for the digital business sector is ranked first (path coefficient value equal to 0.23), then digital literacy and community digital culture (path coefficient value equal to 0.22). Education and training in entrepreneurship is ranked third (path coefficient value equal to 0.21), while knowledge in entrepreneurship is ranked fourth (path coefficient value equal to 0.20), and finally digital infrastructure is ranked fifth (path coefficient value equal to 0.17).

Figure 3. Ranking of factors affecting the intention of digital entrepreneurship



Source: Authors' elaboration

5. CONCLUDING REMARKS

5. 1. SUMMARY OF THE RESULTS

To diversify their economies and reduce oil dependence, GCC countries have increasingly invested in developing their digital economy, seeking to boost non-oil GDP. Digital entrepreneurship is a crucial driver of development in the digital economy sector. This study aims to identify factors influencing digital entrepreneurship in GCC nations. To do so, it relies on primary data collected through a questionnaire distributed to a randomly selected sample of 229 university

graduates in the region. Following data processing, statistical and quantitative analysis was performed using SEM, with SPSS27 and AMOS27 as the software tools.

The study reached the following results. First, the findings reveal five key factors that positively impact digital entrepreneurship intention, thereby increasing the rate of entrepreneurial ventures in the digital economy. These factors include (1) literacy digital culture, (2) digital entrepreneurship education, (3) digital entrepreneurship knowledge, (4) digital infrastructure, and (5) government policies and support mechanisms for the digital business sector. Second, based on path coefficient values, the factors influencing digital entrepreneurship intention were ranked by their impact on establishing digital ventures as follows. The most influential factor on individuals' intentions to pursue digital ventures is government policies and support mechanisms for the digital business sector, followed by digital literacy and the spread of societal digital culture, education and training related to digital entrepreneurship, digital entrepreneurship knowledge, and digital infrastructure.

5. 2. POLICY RECOMMENDATIONS

The study suggests five factors that significantly influence digital entrepreneurship intention in GCC countries, ranked by importance as follows: government policies and support mechanisms, digital literacy and societal digital culture, digital entrepreneurship education and training, digital entrepreneurship knowledge, and digital infrastructure. Based on the findings, the following policy recommendations may be formulated. First, government policies and support mechanisms are found to be most influential factor influencing the intention to digital entrepreneurship. This underscores the important role of regulatory environments in shaping entrepreneurial activities, particularly in the dynamic digital economy. In this context, it is crucial to first develop a digital business climate by enacting modern laws and regulations that facilitate the establishment of digital entrepreneurial projects, regulate commercial transactions in the digital space, ensure legal protections for online transaction and promote the regulatory frameworks related to new digital tools, including fintech, blockchain, and artificial intelligence. It would be also beneficial to establish a special system for digital entrepreneurship specific to GCC countries. Other mechanisms, such as fiscal incentives, reduced licensing fees, and startup grants, can support new digital entrepreneurship. Second, GCC countries are generally considered digital societies, characterized by the spread of digital culture among school and university students. However, further efforts can be made to promote digital culture to build a digitally advanced society capable of using digital tools effectively. GCC countries should enhance digital culture to build a digital society by promoting self-directed digital learning, encouraging the use of technological and digital tools at all educational stages. This will enhance digital knowledge and influence future employment choices for youth. It is also important to continue developing the delivery of government services through digital tools so that citizens become accustomed to digital usage. Third, digital entrepreneurship education and training rank as the next most impactful factor, highlighting the critical role of learning environments in developing entrepreneurial capabilities. It is therefore important to equip individuals with essential tools to identify, develop, and scale digital business opportunities. Universities and technical institutions may play a central role by offering interdisciplinary programs that integrate business, technology, and innovation studies. It is particularly important for universities to provide educational programs that foster entrepreneurial thinking, including project-based learning, case studies, problem-solving, and other strategies that contribute to shaping students' entrepreneurial personalities. Universities should also develop their technological infrastructure by establishing labs that rely on information technologies, such as virtual labs for trading securities for management disciplines, artificial intelligence and big data labs for IT and computer science

disciplines and smart grid labs for engineering disciplines. Digital entrepreneurship knowledge, referring to the specialized, actionable know-how required to launch and manage digital businesses effectively, is the fourth factor influencing digital entrepreneurship. This includes understanding digital business models, navigating online legal and regulatory environments, employing digital marketing strategies, and leveraging data analytics. The study suggests that while digital awareness exists in GCC countries, targeted efforts are needed to build deeper level of expertise. Governments, universities and training centers should collaborate to offer up-to-date and industry-aligned training programs. Courses which should be accessible to students, jobseekers, freelancers, and existing entrepreneurs alike, may cover various topics related to digital entrepreneurship, such as laws, regulations, and procedures for establishing digital entrepreneurship projects, digital marketing, and the use of big data and artificial intelligence to enhance information utilization. Although ranked lowest among the five key factors, digital infrastructure remains a critical enabler of digital entrepreneurship. The outcomes suggests that reliable access to fast internet, secure digital payment systems, cloud platforms, and the existence of cybersecurity tools, promotes digital entrepreneurship activities. While GCC countries have made significant investments in digital infrastructure, efforts must instead concentrate on optimizing access, affordability, and sector-specific digital tools. For instance, platforms that support e-commerce, telehealth, and fintech should be developed. Moreover, ensuring equitable deployment of digital infrastructure is essential to preventing disparities in access that may hinder digital entrepreneurial opportunities.

5. 3. LIMITATIONS AND AVENUES FOR FUTURE RESEARCH

This research contributes to the literature on factors influencing the intention to engage in digital entrepreneurship activities developing countries, with a particular emphasis on GCC. However, it is essential to recognize the limitations of the study, which calls for expanding the scope of research and conducting further studies to understand the potential impacts of other social, economic, and technological variables on individuals' intentions to pursue digital entrepreneurship. It is also crucial to conduct country-specific analysis among GCC nations to identify the potential differences in terms of digital readiness and policy frameworks. The present study could be also extended by focusing on the drivers of digital entrepreneurship among specific population groups, such as female entrepreneurs, given its potential to offer significant job opportunities. Finally, it may be interesting to examine the drivers of digital entrepreneurship within specific sectors, including the telecommunications sector, the consulting sector, etc.

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