Check for updates

OPEN ACCESS

EDITED BY Bing Xue, Institute for Advanced Sustainability Studies (IASS), Germany

REVIEWED BY Daniela Piazzese, University of Palermo, Italy Dafang Wu, Guangzhou University, China

*CORRESPONDENCE Chunliang Xiu, xiuchunliang@mail.neu.edu.cn

SPECIALTY SECTION This article was submitted to Geoscience and Society, a section of the journal Frontiers in Earth Science

RECEIVED 31 August 2022 ACCEPTED 30 September 2022 PUBLISHED 10 January 2023

CITATION

Xiu C and Li T (2023), Construction of the Hainan Free Trade Port from the perspective of regional cultural development. *Front. Earth Sci.* 10:1032953. doi: 10.3389/feart.2022.1032953

COPYRIGHT

© 2023 Xiu and Li. This is an openaccess article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Construction of the Hainan Free Trade Port from the perspective of regional cultural development

Chunliang Xiu^{1,2}* and Tong Li¹

¹School of Humanities and Law, Northeastern University, Shenyang, China, ²Jangho Architecture College, Northeastern University, Shenyang, China

This study summarizes the internal relationship and mechanism of industrialization, business culture, and higher education that affect the development of modern industrial and commercial culture, and consequently, the construction of free trade ports in Hainan. The cases of Hong Kong, Singapore, and Dubai free trade ports were considered as references. Based on immigration, naturalization, and education in Hainan's history, Hainan's cultural base map, which influences the construction of modern industrial and commercial culture, was proposed to be formed by splicing and overlapping of the free, guarding, farming-reading, farmingmarine, and immigrant cultures. The development course of Hainan in the past 30 years indicated that although Hainan has always been at the forefront and highland of reform and opening up, it is still relatively backward despite the implementation of long-term policies; moreover, its development performance is not ideal. The existing problems and factors related to the present ideology mainly include the following: 1) The pursuit of "making quick money" has led to the ups and downs of Hainan's development. 2) Lack of innovation hinders functional improvement leading to poor sustainability. 3) The course of modern industrial civilization based on a cultural base map is short. 4) Although bottomup industrialization plays a key role in the formation of modern industrial civilization, it is not followed by Hainan. Furthermore, the cultural development path of Hainan Free Trade Port construction should 1) strongly promote industrialization by overcoming the shortcomings of industrial development, 2) deepen the reform of the agricultural reclamation system, improve the business environment, and cultivate a healthy modern industrial and commercial culture, 3) standardize the tourism market, and build the most advanced tourism industry culture, 4) improve the basic education level and develop excellent higher education opportunities, 5) enhance the diversity of human resources structure, and 6) revitalize literature and art, and showcase and develop Hainan's fine culture. Overall, the construction of the Hainan Free Trade Port requires long-term upgrading and development. It is necessary to continue cultural construction, adapt to the requirements of the highest level of openness and realize the healthy development of the Hainan Free Trade Port.

KEYWORDS

cultural base map, modern industrial and commercial culture, industrialization, regional development, Hainan Free Trade Port

1 Introduction

Hainan has been established as the largest special economic zone in China since 1988. Since the past 30 years, Hainan has changed its poverty and social backwardness; additionally, its development has changed course from being special economic zones to international tourist islands and free trade zones. However, except for tropical agriculture, tourism, and real estate, other industries such as the internet, medicine, and building materials have not developed extensively, and their role in the overall national development is lower than expected. On 1 June 2020, the state issued an overall plan to construct the Hainan Free Trade Port, which resulted in another historic opportunity to promote Hainan's development. The Hainan Free Trade Port can not only develop free trade but is also a strategic arrangement for Hainan's comprehensive and high-quality development. A question that arises here is that "Can we seize and efficiently utilize new opportunities, transcend the limitations of previous development results, and realize a real leap in Hainan's regional development by constructing a free trade port?" This is a common concern across different sectors. However, related research has been mainly conducted on aspects, such as international experience, free trade port system innovation, open policy, government distribution service framework, and domestic and foreign markets that has focused on the historical lessons of Hainan's development in the past 30 years (Wan et al., 2014; Zhiyuan and Rui, 2020; Li S. et al., 2021; Fan et al., 2022; Ye et al., 2022). As the construction of the free trade port is still at its nascent stage in achieving high-level economic development by integrating elements and resources, the influence of people and their cultural factors that play a role in regional development has been receiving increasing attention. This study analyzed the Hainan development history from the perspectives of regional culture, discussed the existing problems, and proposed the development of a free trade port through the construction of modern industrial and commercial culture, with an aim to promote the efficient and continuous construction of the free trade port.

2 Regional culture and development

2.1 Culture and civilization

Several definitions of "culture" exist that originate from different research perspectives. As early as 1871, British anthropologist Taylor defined culture as "culture or civilization includes knowledge, belief, art, law, ethics, and customs, as well as all abilities and habits acquired by people as members of society" (Taylor, 2010). Moreover, Guiso believed that culture represents "the traditional beliefs and values passed down from generation to generation by ethnic, religious, and social groups" (Guiso, 2006). Castellani mentioned that culture can be summarized by three characteristics: 1) it is shared by a group of people and is spread through socialization, 2) it imposes informal constraints on interpersonal communication, and 3) it differs from knowledge or human capital (Castellani, 2019). Malinowski believed that culture includes three levels, namely, utensils, organizations, and values, which are inseparable and differ regionally or at different historical stages (Malinowski, 2013).

These definitions indicate that there is a consensus that culture is the social and historical precipitation of humans, way of life (production), spiritual value, and group consciousness, including social customs, religious beliefs, ways of thinking, values, aesthetic tastes, and spiritual totems.

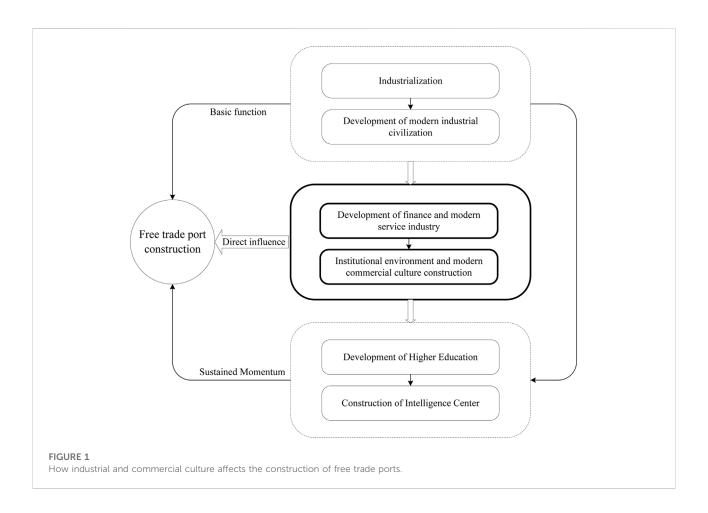
"Civilization" is the same as culture, but the difference is that culture is a concrete topic, while civilization sums up cultures and has integrity. Therefore, civilization is occasionally used in discussions related to culture.

2.2 Cultural and regional development

The important role of culture in shaping regional society and economy has received widespread attention. Weber indicated that at the beginning of the last century, the Protestant Reform was one of the main driving forces in the development of capitalism by encouraging individuals to pursue their own wealth (Weber, 2016). Schumpeter believed that innovation is the source of economic development, and the ability of innovation depends on the cultural and psychological factor of entrepreneurship (Schumpeter, 2021).

In the 1990s, "Cultural turn" represented an important academic change in western social sciences. The role of non-economic factors, such as culture, in the evolution of the spatial pattern of economic activities has been receiving widespread attention. To understand the basic regional characteristics during the interaction of social culture and political economy, the essence of regional development should be captured and the local diversity and regional differences should be comprehensively and accurately understood (Scott, 2017; Liu and Yao, 2021; Zhan and Gu, 2022). The main concept connecting culture and economy is "embeddedness," which implies that the relationship network among the stakeholders of economic activity considerably affects the outcomes of economic activities (Yeung, 2003).

The relationship between culture and economic development has received the attention of some researchers. For example, Amin considered the development of cultural and economic geography, and highlighted the mutual construction and mutual shaping relationship between culture and economy (Amin and Thrift, 2007), while Gibson proposed two paradigms of "cultural economization" and "economic culturalization" for the development of cultural and economic geography wherein the



former regards culture as a production factor (Gibson and Kong, 2005). Castellani divided the study of culture and economy into two categories; the first aimed to study cultural industry considering economic methods and theories, while the other regarded cultural factors as variables that affect economy; subsequently, these factors were included into economic research (Castellani, 2019).

Regional culture is the spatial projection of social culture, and exhibits regionality. It descriptively embodies the regional humanistic characteristics and spiritual outlook, and then becomes the internal factor fundamentally affecting the regional development trends and prospects. Scholars discussed the relationship between cultural factors and regional economic development, and conducted a preliminary analysis of the influence of a cultural model, cultural concept renewal, and cultural stereotypes on regional economic development (Johnson and Lenartowicz, 1998; Shi et al., 2014). Moreover, Scholars also discussed how regional cultural concepts affect regional development aspects across macro and micro levels and the regional development model with distinctive regional cultural characteristics formed through macro- and micro-level interactions (Huggins and Thompson, 2015; Lin et al., 2016). Considering the relatively good performance of economic and social development in areas dominated by the Protestant and Confucian civilizations, Zhang investigated the influence of Protestant and Confucian work ethics on

the innovative behavior of employees in China (Zhang et al., 2012), and reported that the economic take-off of East Asia was highly evident in the late 20th century. Moreover, the emphasis of the Confucian culture on diligence, thrift, order, discipline, collectivism, knowledge, faith, and family responsibility was strongly related to this economic phenomenon (Yang, 2012; Tian et al., 2022). Since hundreds of years, owing to the prominent contradiction between man and land in the southeast coastal areas of China, the commercial and market culture was deeply rooted to ensure survival; therefore, it has achieved better development results under the background of reforms and opening up.

3 Modern industrial and commercial cultures and the construction of a free trade port

3.1 Modern industrial and commercial cultures and the significance of building a free trade port

Regional traditional culture and industrial and commercial traditions significantly influence the establishment of market

economy mechanisms and the development of modern industrial civilization. Regions rich in traditional commercial cultural resources have gained a broad belief foundation, rich knowledge sources, and strong power in market transformation, reform and opening up, and development performance (Li J. et al., 2021). Regional economic growth and social development and progress in many Chinese regions include the promotion of transformation from traditional farming civilization, with different characteristics, to modern industrial civilization, and the formation of a modern industrial and commercial culture that is conducive to opening up and innovative development.

Free trade port is a particular economic functional area in a country (region) that implements the policies associated with clearance of domestic customs, free entry and exit of personnel, goods, and funds, tariff exemption for most goods, and free and appropriate trade opportunities, all of which represent the highest level of economic openness in the world. Further, free trade port, which has high requirements for the legal system and contractual engagements, must have a competitive market environment with high openness and rigorous flow of factors. Hainan's status as a particular zone, unique location, good ecological environment, and conditions as an independent geographical unit is particularly suitable as a pilot field for national reform. The construction of the Hainan Free Trade Port will help to enhance the functional level of Hainan, make Hainan more internationally and regionally competitive, and further solve the problems that Hainan has been facing for decades, which is a significant initiative under the national overview. Under the guidance of this new goal, we should prioritize the role of cultural construction and promote the transformation of traditional regional culture to a form that meets the demands of modern industrial and commercial development to achieve the goal of high-level regional development and free trade port construction.

3.2 Experience of free trade port and its cultural environment construction

Presently, Hong Kong, Singapore, and Dubai are three free trade ports with high international recognition and successful operations. These three free trade ports and their cultural environment can be compared based on the following characteristics:

3.2.1 Industrialization process

Hong Kong and Singapore have experienced rapid industrialization, and their manufacturing industries were once extremely strong. The current industrial sectors in Dubai, including aerospace, marine equipment, biomedicine, and medical equipment, account for 11–14% of the gross domestic product (GDP). Further, Dubai is striving to promote diversified economic development, and the proportion of the oil industry in Dubai's GDP has dropped from 50% (30 years ago) to approximately 1% (present) (Dubai Statistics Center, 2020).

3.2.2 Business culture

Hong Kong, Singapore, and Dubai have well-established financial centers with advanced institutional environments and business cultures. Particularly, Singapore and Hong Kong ranked second and fourth, respectively, in the 2019 Global Business Environment Report (World Bank, 2018). Dubai is also an important financial center in the Middle East and in the world. All three regions have highly open money markets and capital markets, flawless credit systems, and advanced business cultures (Akhavan, 2017; Peng et al., 2018; Dong et al., 2019; Harrison et al., 2020).

3.2.3 Talent and education

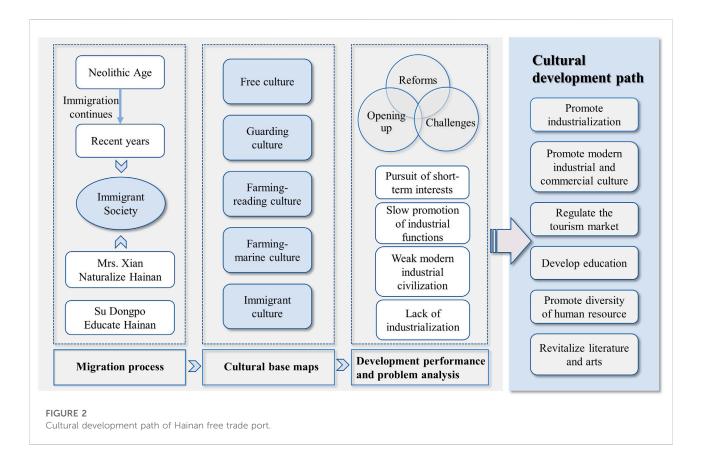
Hong Kong and Singapore have many institutions for higher learning, advanced higher education, and excellent university resources. In Dubai, although the number of traditional institutions for higher learning is limited, Dubai vigorously supports the special education zone to attract overseas branches and establish the Dubai International Academic City, consequently, forming an agglomeration effect; additionally, the degree of internationalization of universities in Dubai is extremely high (Rottleb and Kleibert, 2022). Superior higher education is a fundamental requirement to ensure that human resources, scientific and technological achievements, and cultural environment are consistent with the functions of the free trade port.

3.3 Mechanism of modern industrial and commercial cultures affecting the construction of the free trade port

Using the abovementioned three areas as references, it is clear that the development of industrialization and modern industrial civilization plays a fundamental role, the development of a financial center and modern service industry has a direct impact, and the construction of a higher education and intellectual center promote sustainable development for the construction of the free trade port (Figure 1).

4 Modern industrial and commercial cultures of hainan and regional development performance and problem analysis

Hainan has experienced immigration since ancient times, and has consequently, formed an immigrant society with Han



nationality as the main body, including Li, Hui, Miao, and other ethnic minorities. Modern industrial and commercial cultures are closely related to regional development and immigration process (Figure 2).

4.1 Migration process

The ancestors of the Li nationality moved to Hainan Island in Neolithic Age and became the earliest residents. During the Qin and Han Dynasties, Lingao community crossed the Qiongzhou Strait and moved to the northern part of the island. Further, the Western Han Dynasty started establishing county governance, and until the Five Dynasties, immigrants from the Central Plains represented the main immigrant community, which was distributed in the northwest and northern coastal areas of the island. Later, Muslims began to enter Hainan Island in the Tang Dynasty and Muslims who settled in Song and Yuan Dynasties became the ancestors of Hui nationality in the island (Zhou and Tang, 2019). Since the Song Dynasty, trade in the South China Sea developed, and Hainan Island ultimately became an important landmark for sea routes. Many businessmen settled in Hainan, with most immigrants originating from Fujian, Guangdong, and Guangxi. They continued to immigrate during the Yuan and Ming Dynasties, reaching a peak in the Qing Dynasty, during which

there was a simultaneous climax of overseas immigration from the late Qing Dynasty to the Republic of China. Most of the Miao immigrants on the island originated from the Jiajing and Wanli years of the Ming Dynasty, who transferred troops from Guangxi and settled in Hainan (Yan and Liu, 2011). After 1950, Hainan was populated by cadres from the north, soldiers and their families who entered the agricultural reclamation system, immigrants who entered various state-owned farms and returned overseas, Chinese intellectuals who were transferred due to construction, and educated youths who settled in Hainan while working in the countryside. After Hainan was established as a province, nearly 100,000 skilled personnel moved to Hainan (Qi, 2018). Subsequently, there was a constant influx of hundreds of thousands of migrant workers, and in recent years, a large number of retired citizens have migrated from the north.

Although Hainan was established as early as the first year of Han Yuanfeng (110 BC), the post-rebellion continued and Zhuya County was abolished; consequently, it was excluded from the effective jurisdiction for more than 500 years. During the Liang Wudi period of the Southern and Northern Dynasties, Mrs. Xian led her department to Hainan Island by crossing the Qiongzhou Strait to counter insurgency and conciliate the people. Simultaneously, Yazhou was built under her leadership. After decades of loyalty, Hainan politically unified with the mainland. Thus, Mrs. Xian could be mentioned as "the first person to naturalize Hainan." Until the present day, Hainan conducts the "Noisy Military Slope" activity in February of the lunar calendar to commemorate Mrs. Xian¹.

During and after the Song Dynasty, numerous Han population moved into Hainan to make cultural connections, and the demotion of officials by the imperial court encouraged Hainan to attach importance to learning. Specifically, Su Dongpo was demoted to Hainan for 3 years, during which he conducted lectures and trained talented individuals; thus, he is referred to "the first person to educate Hainan." During the Ming and Qing Dynasties, academics, charitable schools, and community schools prevailed in Hainan, with many talented individuals appearing successively. Subsequently, Hainan began to disseminate talent, and was thus, referred to as "seaside Zou Lu" (Li, 2011)². During the Ming Dynasty, Juren and Jinshi were in large quantities. Although the imperial examination results in the Qing Dynasty were inferior to those in the Ming Dynasty, the extent of cultural development and popularization advanced. Since modern times, Hainan culture has been greatly influenced by the western culture and overseas Chinese culture, consequently, resulting in modern education. After the foundation of New China, exceptional achievements were made in cultural popularization, and higher education and basic education was developed holistically. However, even now, Hainan's culture and education lag behind the national average level and people still do not give sufficient attention to culture and education (Liu and Gao, 2022).

4.2 Cultural base maps

Based on immigration, naturalization, and education in Hainan's history, along with the author's observations since several years, this paper attempted to comprehensively depict the cultural base map of Hainan. The different cultures were as follows:

Free culture: Individuals of the Li nationality were the first residents of Hainan, and there are millions of people at present; In the early days, these individuals dispersed across the entire island; subsequently, they migrated to the Wuzhishan and Limu mountains with the migration of mainland residents. The Li culture is characterized by naturalism and long-term stability of primitive culture. The social customs of matriarchal clans have been inherited in modern-day populations. Further, the primitive production system of "collective tillage system" continued in the central area of Wuzhishan until the early liberation, and the slash-and-burn land development mode was not completely eradicated even in the 1980s (Gao, 2011)³. Owing to the tropical conditions of

this island, residents have become accustomed to a relaxed, slow, and simple life. In the past 30 years, the development process as a tourist center and a hotspot for health care and elderly care has also strengthened the regional characteristics of free culture.

Guarding culture: Hainan, an isolated island away from the national political center, has guarding problems before and after naturalization. As the Chinese culture was recognized, Lingao people adapted to naturalization and guarded the Hainan Island. During the later dynasties, garrison soldiers converted wastelands to cultivated lands with the assistance of farmers and businessmen to increase food production and generate revenue. Even now, coastal military dialect areas are scattered in the west and southwest of the island, which could be related to the sergeants who were recruited for guarding. From the end of the Yuan Dynasty to the beginning of the Ming Dynasty, Hainan was a pioneer in resisting the invasion of pirates; additionally, Hainan was also an important military center in modern times. Although the militarized agricultural reclamation system (Hainan Agricultural Reclamation), which was established after New China was founded, was not as large as Xinjiang Production and Construction Corps and Heilongjiang Agricultural Reclamation, it had a population of millions. It was once the main carrier of planned economy and significantly influenced Hainan society and its cultural composition. Since the foundation of the People's Republic of China as a national defense outpost, economic activities have been suppressed, and only primary products, such as grain, fishery, mined resources, and heat island crops, have been produced, without industrialization and without the influence of the corresponding industrial cultural process. The long-term guarding process and related functions have historically accumulated, and some characteristics, such as rugged publicity, bravery, and aggressiveness are related to this.

Farming-reading culture: Many Han people and demoted officials entered Hainan to develop agriculture in the low-level coastal areas around the island, with an aim to continue the activities of Central Plains and establish farming and reading traditions. Since the establishment of the Republic of China, basic education has gained popularity, but the development of high education quality at all levels has been slow. Farming-reading culture is aggressive. In the face of nature, a pragmatic view of heaven and man has been formed, and a social atmosphere of honesty, loyalty, and frankness has been formed through social interactions.

Farming-marine culture: Owing to the continuous progress of shipbuilding and navigation technology, marine fisheries and overseas trade are increasingly advancing. Hainan fishermen create a "Geng Lu Bu" for "farming-marine."⁴ Fishermen believe in the oceans and are not afraid to take risks in life-

^{1 &}quot;Noisy Military Slope" refers to the Chinese Haikou Mrs. Xian Cultural Festival, a festival established in honor of Mrs. Xian.

^{2 &}quot;seaside Zou Lu" means the place where coastal culture flourishes.

^{3 &}quot;collective tillage system" is a system in which all members work together, and the products are distributed equally by household.

^{4 &}quot;Geng Lu Bu" is the knowledge of the route of navigation in the South China Sea that has been summed up by the people of Hainan in the practice process for thousands of years.

threatening environments to gain monetary profits. This attitude is an integral part of the farming-marine culture and has significantly contributed to developing the South China Sea Islands and their inclusion in China's territory. However, there is also some continuity in the value orientation of not sticking to rules and pursuing quick success.

Immigrant culture: Since a long time, local and foreign cultures have been blending, thus, forming a complex and diverse immigrant culture, which makes Hainan culture both diverse and inclusive (Zhu and Situ, 2001). The successive immigration and development of the Li, Miao, Hui, and Han nationalities in the Hainan Island is a result of continuous cultural integration. Even Han culture has many branches, including Minnan, Hakkas, and Chaoshan. After Qiongzhou was opened as a trading port in the late Qing Dynasty, several Hainan residents immigrated to Southeast Asia to earn livelihood, making Hainan an important hub of overseas Chinese population. Overseas technology, capital, and culture were transferred back to Hainan through various modes, which further increased the openness of Hainan culture. After the foundation of the People's Republic of China, especially since the foundation of the province, several new immigrants from all over the country engaged in tourism and other industrial activities and seasonal tourism immigrants entered Hainan, which further increased the diversity of regional culture and resulted in new challenges to upgrade functions.

Overall, the cultural base map in Hainan Island was formed by splicing and overlapping the free, guarding, farming-reading, farming-marine, and immigrant cultures. The characteristics of each of these cultures will fundamentally affect the regional development and modern industrial and commercial culture construction of Hainan in the future. Although realizing the development and evolution from "freedom" to participation in market competition, "guarding" to innovation and change, "farming-reading" to paying equal attention to business studies, and "farming-marine" to the development and evolution of accumulation is a challenging process, it is the key to building a vibrant modern industrial and commercial culture. However, the changes in immigration structure will directly affect the cultural characteristics of regional industry and commerce, and become an inevitable requirement to construct new functions.

4.3 Course of reform and opening up and the development of modern industrial and commercial culture

Hainan was mainly an agricultural region during its establishment. Despite its weak foundation and relatively backward economy, it has retained various policy advantages for more than 30 years and has become the frontier and highland of reform and opening-up.

4.3.1 Forefront in reforms

Hainan has always been at the forefront of national reforms, with nearly 100 reforms in total. Since the establishment of Hainan Province in 1988, the entire island has been designated as a special economic zone, thereby acting as a pioneer in reform. In recent years, the role of Hainan pioneers has expanded in several aspects. For example, in 1999, Hainan decided to build China's first ecological demonstration province (Zhang et al., 2019; Zhao and Jia, 2019; Qi et al., 2021). For more than 30 years, it adhered to the concept of green development and preserved the ecological environment of Hainan. In 2004 and 2005, policies to offset tax on special agricultural products and exempt agricultural tax, respectively, were implemented in Hainan, to promote agricultural development on the island. In 2014, Hainan was one of the first pilot provinces to implement a judicial system reform in China. Additionally, the reform related to the agricultural reclamation system is at the forefront of the country. In 2015, Hainan became the only provincial "multiplanning integration" reform pilot area in China, led to the practice of national "multi-planning integration" and institutional innovation. Other aspects, such as fiscal and taxation system, global tourism, and the reform of government functions, were also at the forefront. The status of reform pioneer positively influences the entire society to cultivate innovative consciousness and legal spirit and create a relaxed market environment.

4.3.2 Highland for opening up to the outside world

Hainan has always encouraged the idea of opening up to the outside world, and thus, it represents an open highland. In February 2001, to promote exchanges and cooperation between Asian countries and the world, Boao Forum for Asia was established. Hainan, representing the most open "Sky Special Zone" and the first pilot province in China, was the first to open the third, fourth, fifth, and seventh air rights (Civil Aviation Administration of China, 2020). Since May 2018, Hainan has followed a visa-free policy for inbound tourists of 59 countries, expanded the scope of visa-free countries, extended the visa-free residence time, and relaxed the number of visa-free people (People's Government of Hainan Province, 2018). The tax exemption policy for outlying passengers of Hainan implemented since July 2020 has further improved the tax exemption amount and the types of tax-free goods based on the pilot policy established in 2011 (Luo and Tian, 2016). Furthermore, Hainan, as the Frontier of maritime exchanges between China and Association of Southeast Asian Nations (ASEAN) countries, has continuously strengthened economic ties between the two parties by developing the "Belt and Road Initiative" and launching the China-ASEAN Free Trade Area, which promotes healthy relations between China and ASEAN countries. Moreover, Hainan integrated the "Pan-South China Sea Economic Cooperation Circle" in the "Belt and Road Initiative" (Jin et al., 2021). This attitude of open highland has improved Hainan's integration with international mainstream market rules, and cultivated a cognizance of rules and an open vision of the entire society.

4.3.3 Challenges reflected through major events

The occurrence of several major events in Hainan over the years hindered its development course. Some of these events were the automobile smuggling incident before and after the establishment of the province, the storm in Yangpu, the real estate bubble, the second surge of the real estate market under the international tourism island strategy after 2010, and the real estate status across the island (Li, 2007; Tang et al., 2021). These events highlight the excessively high risk-taking and speculative orientations of some participants while pursuing economic development, as well as the lack of legal awareness and industrial outlook.

In addition to tropical agriculture, tourism and real estate, Hainan has attempted to transform and upgrade several other sectors. Some of these examples include the establishment of Hainan Airlines, the strategy of "one province and two places" (building China's emerging industrial province, tropical highefficiency agricultural base, and tourism resorts, 1996), the establishment of Boao Forum for Asia (2001), the establishment of Yangpu Bonded Port Area (2007), and the establishment of Sansha City (2012). These measures have promoted Hainan's status and have comprehensively affected Hainan's regional development and modern industrial and commercial culture construction, but their role in developing foundation industries is not yet evident.

In 2018, on the occasion of the 30th anniversary of Hainan's establishment as a provincial special economic zone, the central government decided to support Hainan's establishment of an island-wide free trade zone (The State Council, 2018a). Simultaneously, Hainan Province announced the upgrading of real estate control measures, implemented the global purchase restriction, and proposed relatively strict restrictions on the payment of personal income tax or social insurance for nonregistered families of this province. Subsequently, the regulation and control policies of the real estate market continued to overweigh, demonstrating Hainan's determination to de-real estate and transform and develop. In the second half of 2018, the overall plan of Hainan Pilot Free Trade Zone was proposed, and the construction of the free trade zone was comprehensively deployed from the aspects of economic system and service industry innovation and development (The State Council, 2018b). In November 2019, the Ministry of Commerce and other 18 governmental departments jointly issued a notice, proposing policies for improving the level of investment and trade facilitation, expanding the opening up of the financial sector, and accelerating the development of the shipping sector. In June 2020, the "Overall Plan for the Construction of Hainan Free Trade Port" was released, which proposed to develop Hainan into a high-level free trade port with strong international influence. In total, Hainan has 39 specific policies associated with free trade, investment, and cross-border capital flows in 11 areas (The State Council, 2020).

Thus, Hainan was again on the path of unprecedented development opportunities. However, we should learn from the previous experiences, expand the perspective of the new road of free trade port construction and regional healthy development, and construct modern industrial and commercial culture, including ideology and business concept. Moreover, as development performance has been unsatisfactory in the past, we should also reflect on the construction of industrial and commercial culture.

4.3.4 Development performance and problem analysis

In 2019, the GDP of Hainan Province was 530.893 billion yuan, the ratio of primary, secondary, and tertiary industries was 20.3:20.7:59.0, urbanization rate was 59.23% and the per capita GDP was 56,507 yuan, which was significantly lower than the national average of 70,892 yuan (People's Government of Hainan Province, 2020). Further, taxation and finance depended on real estate, and the income of residents, which depended on tourism was below the national level, despite the high cost of living. Moreover, the industrial development was weak, with the construction industry accounting for nearly half of the secondary industries.

The economic development of Hainan Province began late and had a poor foundation. However, with good resource conditions, unique ecological environment, and superior location facing the South China Sea, after more than 30 years of preferential policies, the economic development level represented by per capita GDP is still lower than the national average, and the quality of economic growth is not high; therefore, the performance of Hainan's economic development is not ideal. The analysis of existing problems and related ideological factors mainly includes the following factors:

4.3.4.1 The pursuit of "making quick money" has led to the ups and downs of Hainan's development

On observing Hainan's development since more than 30 years, we found that after several uncertainties, from the automobile incident and real estate bubble to the high interest rate of credit cooperatives and the construction of an international tourist island that boosted Hainan's housing prices, brought short-term dividends. This highlights the problems of excessive risk-taking, insufficient adherence to rules, and lack of industrial spirit. Thus, we can conclude that quick money is unreliable, and restoring normal conditions after the uncertainties that arise due to the pursuit of quick money demands more energy. If the tourism industry does not make long-term plans and make great efforts to standardize management, it will easily become a quick money industry. Moreover, implementing any new favorable policy can be regarded as an opportunity to make quick money under the notion of quick success and benefit.

4.3.4.2 Lack of innovation leads to poor sustainability and slow improvements in functions

Hainan is not highly developed in the existing regional division of labor. In the public cognition, migratory bird pension, tourism, and tropical agriculture are the representative industries and functions of Hainan, which are not only far from the advanced nature of industrial structure, but also do not represent strategically emerging industries that are generally concerned by all localities. Moreover, the cultural environment and talent reserve required by industrial transformation and upgrading, and regional innovation and development are insufficient, resulting in fewer advanced functions and poor sustainability.

4.3.4.3 Short course of modern industrial civilization on the cultural base map

Intensive development of agriculture should be consistent with the modern artisan spirit in industrial culture. However, slash-andburn farming has been a traditional agricultural practice in Hainan for a long time, and intensive cultivation production is gradually spreading from coastal areas to the central areas. Overall, the entire island lacks a common tradition of intensive cultivation.

Although Hainan's tradition of farming-reading is not shortterm, its development on the island is highly non-uniform. Apart from values, such as honesty, courtesy, and pragmatic and enterprising natures, various complex and contradictory values still exist widely.

Hainan's daily life represents both slow and bold characteristics. This can be explained with the following example. "Old Papa Tea" represents the "slow life" of Hainan Island. Some friends can spend the entire day in hot summers with only a pot of tea⁵. "Old Papa Tea" is cheap and popular, and it is a comfortable lifestyle. "Chigongqi" completely reflects the hospitality and boldness of the Hainan people⁶. Whether the visitors are related to their hosts or not, "all guests are considered relatives" and should receive warm hospitality. However, these characteristics have some adverse effects on wealth and business principal accumulation, and participation in market competition.

The character and spirit of defying risks and seeking wealth in risks have considerable positive significance, but these may act as drivers of various short-term behaviors when formal channels are insufficient.

Furthermore, characteristic buildings also have certain cultural significance. The arcade is an architectural form that is supported

by columns below, cantilevered from the second floor, and connected to multiple houses to form a pedestrian corridor (Zhao, 2020). Vendors can solicit business without any hindrance from wind and rain. The arcade in Hainan has a history of more than 100 years. It has a blend of Chinese and Western cultures, and conveys Hainan people's commercial ideology, which represents Hainan's modern urban commercial civilization. However, similar commercial civilization elements are not prominent in other regional cultural backgrounds.

4.3.4.4 Lack of industrialization process

Industrialization involves technology accumulation, changes in the economic structure and production mode, and social wealth surges. Bottom-up industrialization is also necessary to cultivate craftsman spirit, develop industrial civilization, and promote scientific, technological, and cultural progress. Hainan has long been a military center and a coastal defense outpost, focusing on reclamation and guarding; however, its industrial development is limited. Since the establishment of the province, the need for industrial development has been reconsidered several times. Consequently, industrialization has not been successfully achieved, and the process for developing industrial culture and industrial civilization is also lacking. Based on the current actual effect, promoting advanced industrial culture only through real estate and tourism is difficult, both of which may also have a "crowding out effect" on the development of new industries. Contrastingly, China's Yangtze River Delta and Pearl River Delta regions have faced complete industrialization since the reform and opening-up. The transformation of light industry to heavy chemical industry to high-tech industry and modern service industry is extremely coherent, and should be backed up by the development of industrial civilization. However, in some other areas, a longterm tradition of regulated economy exists, the development of a light industry with a high degree of marketization is lacking, the industrial structure relies heavily on tourism and other tertiary industries, or the economic development effectiveness is relatively poor for many years, which is worthy of vigilance.

5 Cultural development path of Hainan Free Trade Port construction

Based on the analysis of historical and cultural backgrounds, development performance, and international experience, this paper proposed the cultural development path of Hainan Free Trade Port, which mainly includes the following six aspects:

5.1 Promote industrialization

Regional culture develops after considerable accumulation over a certain period. On the one hand, promoting

^{5 &}quot;Old Papa Tea" is a kind of Hainan distinctive tea culture, economical, and is a good way of leisure and recreation for older people.

^{6 &}quot;Chigongqi" is a crucial folklore festival for the Hainan people.

industrialization assists in addressing the shortcomings of development, strengthening Hainan's economic strength, and supporting the construction of free trade port. On the other hand, industrialization is also necessary to cultivate healthy industrial and regional cultures, which Hainan should consider.

Presently, Hainan's industrial sectors include mainly petrochemical and related products, along with medicine, tropical agricultural product processing, automobile and equipment manufacturing, and information industry, but related industrial parks and enterprises are few, with no industrial scale and industrial chain. In 2020, Hainan's industry accounted for only 9.7% of the province's gross regional product, and it is urgent to promote industrialization. From the experience of other regional development, sustainable development can only achieve by decoupling economic growth from environmental pollution (Zhang et al., 2020). Hainan is also fully aware of the importance of environmental sustainability in developing regional industrialization and is making continuous efforts. In 1997, Hainan started promoting the "Information Smart Island" program, and has been committed to promote the informatization construction of Hainan Island for more than 20 years, paying great attention to the development of the information technology industry. For more than 30 years, Hainan has insisted on establishing an ecological province. In 2019, it established a negative list system for industries, and banned the development of industries having high energy consumption, high pollution, and high emission, along with low-end manufacturing industries (Hou et al., 2020). Hainan adheres to an environmentally sustainable new industrialization path, reduces the environmental risks faced by industrialization, and promotes industrial economic development based on protecting the ecological environment.

In the future, Hainan should strengthen leading industries, form industrial clusters, extend the industrial chain, and create high-value-added products based on environmental sustainability. For example, to develop a modern agricultural and sideline product processing industry featuring tropical crops, relying on excellent location conditions, relying on marine scientific and technological research and development institutions, and developing a blue ocean economy. Increase support for the Internet and artificial intelligence industries and actively integrate with tourism, agriculture, science, education, culture, health, and other industries. Additionally, broad industrial categories and related service industries of fine chemicals, equipment manufacturing, and new energy and materials should be promoted to ensure environmental conservation.

Thus, through the solid promotion of industrialization, Hainan could form an industrial culture that is proficient in craftsmanship, operates with integrity, adheres to rules, and is diligent in innovation.

5.2 Promotion of modern industrial and commercial culture

Modern industrial and commercial culture is also formed spontaneously through conscious promotion, with the cooperation among government, commercial subjects, and the public. Government departments can assist by improving their work methodology and enhancing their administrative efficiency and service level, industrial and commercial subjects can undertake the corresponding social and moral responsibilities, and the public can actively participate and supervise, thereby contributing to the formation and development of an advanced industrial and commercial culture in Hainan Free Trade Port.

The business environment directly affects the behavior of investors, which in turn affects the development and construction of free trade ports. The development of modern industrial and commercial culture should begin with improving the business environment, followed by advancing the reforms of "reform of government functions," simplifying market access, reducing interference with enterprise supervision and law enforcement, serving companies more accurately, and reducing enterprise costs.

The market-oriented reform of the Hainan Agricultural Reclamation, which has a pivotal position in the Hainan society and plays an important role in consolidating coastal defense and national security development, should be expanded. However, initially, social enterprises, government, and enterprises in the system and mechanism were not well distinguished; additionally, a single industry existed and vitality in the operation was lacking. In recent years, the reform in agricultural reclamation has been considerably promoted, but the market-oriented, socialized, and diversified reform is a long-term process. Weak market awareness and disregard for business rules under the long-term government-enterprise integration system should be changed while expanding the reform. Furthermore, executing the market-oriented reform of the Hainan Agricultural Reclamation will effectively solve the problem of slow development of the commercial culture in Hainan.

5.3 Standardization of the tourism market and construction of the most advanced tourism industry culture

Tourism industry is a crucial sector in Hainan. Although Hainan has sufficient experience in tourism development and management, implementing relatively stricter norms, exit mechanisms, and the most open credit system, improving the quality of tourism practitioners, upgrading traditional tourism through innovative cultural elements, and realizing the linkage and integration of culture and tourism is necessary to build the most advanced tourism industry culture in Hainan.

5.4 Improvement in the level of basic education and development of high-class higher education

Skilled personnel are largely required to construct the Hainan Free Trade Port. Additionally, education is an important part of the regional development environment that affects the skilled personnel's willingness to work. However, the present development level of basic education and higher education in Hainan cannot meet these requirements. The function of a highlevel free trade port should be matched in various social fields, including education (Liu and Gao, 2022). High-quality basic education resources, such as renowned schools and teachers, should be introduced, cultural tradition of farming-reading in Hainan should be promoted, level of education awareness should be improved, and attention should be paid to improve the education level in backward areas of the central island. Further, the backward conditions of Hainan's higher education should be changed and high-class universities should be established as a strategic arrangement for Hainan's development and free trade port construction. Constructing high-class universities, collecting and developing skilled personnel, driving regional innovation, serving social needs, and leading social fashion are key links in Hainan's cultural and ecological construction.

5.5 Promotion of diversity of human resource structure

Immigrant culture is inclusive. However, due to the slow development of advanced industries, low wages, and increased brain drain since a long time, the existing tourism industry and human resource structure cannot strongly support the development of the free trade port. According to the construction requirements of the free trade port, the direction and structure of human resources should be regulated. While introducing a large proportion of human resources, attention should be paid to optimizing the combination of age and cultural background, and enhancing the regional industrial and commercial cultural characteristics by introducing a large number of skilled individuals having professional abilities. The restrictions on previously introduced small-sized commercial housing play a certain role in improving the utilization efficiency of scarce resources and optimizing the structure of population and human resources. Moreover, the new housing, employment, and social service policies and other policies can optimize the structure of human resources.

5.6 Revitalization of literature and art and development of Hainan's fine culture

Hainan's local culture is quite unique. Through the creation, revitalization, and development of literature and art, Hainan's

culture will continue to prosper and contribute to the construction of free trade zone.

We should investigate the regional cultural characteristics, encourage literary and artistic creation under the background of Hainan, aggregate a series of literature and art characteristics, enrich the theme forms, support the development of Hainan opera and Lin opera, and protect and inherit local traditional culture. Moreover, media channels should be integrated, Hainan's fine cultural image should be promoted through different platforms, such as mobile phone applications, Internet, digital exhibitions, traditional media, and various tours, while retaining and enhancing its own cultural characteristics. Literature and art can endow Hainan culture with new vitality, and integrate it into the core of the mainstream culture.

6 Conclusion

The free trade port construction will greatly benefit Hainan and the country. Given Hainan's foundation and past development experiences and lessons, combined with the lessons learned from the development processes of Hong Kong, Singapore, and Dubai free trade ports, we believe that the construction of the Hainan Free Trade Port will be a long-term process. Moreover, the past mistakes of "speculating concepts," "making quick money," "misreading the classics," and "coveting fast and short-term effectiveness" should be avoided. "The nine-story platform starts from the base soil," which is based on the long-term process, lays a good foundation, and makes solid progress. Further, the requirements of the highest level of the open form should be improved from infrastructure and project construction hardware to legal system and humanistic environment software, and from the advancement of material form to the advancement of ideological values. Lastly, on analyzing the overall cultural and historical traits and characteristics of Hainan, we believe that the continuous construction of modern industrial and commercial culture will play a longterm role in the healthy development of the Hainan Free Trade Port.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

Conceptualization, CX; methodology, formal analysis, and writing-original draft, CX and TL; software, TL; writing-review

and editing, TL; project administration and funding acquisition, CX. All authors have read and agreed to published version of the manuscript.

Funding

This research study was supported by the National Natural Science Foundation of China (No. 41871162).

Acknowledgments

The authors are grateful to the editor and reviewers for their valuable comments and suggestions.

References

Akhavan, M. (2017). Development dynamics of port-cities interface in the Arab Middle Eastern world - the case of Dubai global hub port-city. *Cities* 60, 343–352. doi:10.1016/j.cities.2016.10.009

Amin, A., and Thrift, N. (2007). Cultural-economy and cities. Prog. Hum. Geogr. 31, 143-161. doi:10.1177/0309132507075361

Castellani, M. (2019). Does culture matter for the economic performance of countries? An overview of the literature. *J. Policy Model.* 41, 700–717. doi:10.1016/j. jpolmod.2018.06.006

Civil Aviation Administration of China (2020). Explanation on the "implementation plan for the pilot opening of the seventh freedom of traffic in hainan free trade port. Available at: http://www.caac.gov.cn/XXGK/XXGK/ZCJD/ 202006/t20200609_203003.html (Accessed August 30, 2022).

Dong, G., Zhu, J., Li, J., Wang, H., and Gajpal, Y. (2019). Evaluating the environmental performance and operational efficiency of container ports: An application to the maritime silk road. *Int. J. Environ. Res. Public Health* 16, 2226. doi:10.3390/ijerph16122226

Dubai Statistics Center (2020). National accounts. Available at: https://www.dsc.gov.ae/ en-us/Themes/Pages/National-Accounts.aspx?Theme=24 (Accessed August 28, 2022).

Fan, G., Xie, X., Chen, J., Wan, Z., Yu, M., and Shi, J. (2022). Has China's Free Trade Zone policy expedited port production and development? *Mar. Policy* 137, 104951. doi:10.1016/j.marpol.2021.104951

Gao, H. (2011). *History of social development in hainan (volume 1)*. Beijing: Guangming Daily Publishing House. (in Chinese).

Gibson, C., and Kong, L. (2005). Cultural economy: A critical review. *Prog. Hum. Geogr.* 29, 541–561. doi:10.1191/0309132505ph5670a

Guiso, L., Sapienza, P., and Zingales, L. (2006). Does culture affect economic outcomes? J. Econ. Perspect. 20, 23-48. doi:10.1257/jep.20.2.23

Harrison, M., Hong, W., Lam, S., and Xiao, G. (2020). The promise of China's free trade zones – The case of hainan. *Asian Educ. Dev. Stud.* 9, 297–308. doi:10.1108/AEDS-11-2018-0173

Hou, S., Xu, B., Lin, L., Zhang, L., Zhao, X., Liu, J., et al. (2020). Research on construction of standard system for development of green economy in hainan province. *IOP Conf. Ser. Earth Environ. Sci.* 508, 012083. doi:10.1088/1755-1315/ 508/1/012083

Huggins, R., and Thompson, P. (2015). Culture and place-based development: A socio-economic analysis. Reg. Stud. 49, 130–159. doi:10.1080/00343404.2014.889817

Jin, F., Yao, Z., and Chen, Z. (2021). Development characteristics and construction prospects for an integrated economic zone in the South China Sea Region. *Dili Xuebao/Acta Geogr. Sin.* 76, 428–443. doi:10.11821/dlxb202102013

Johnson, J. P., and Lenartowicz, T. (1998). Culture, freedom and economic growth: Do cultural values explain economic growth? *J. World Bus.* 33, 332–356. doi:10.1016/S1090-9516(99)80079-0

Li, B. (2011). A probe into the performance and development of hainan culture in the ming dynasty and its causes. *J. Hainan Normal Univ. Sci.* 24, 111–119. (in Chinese). doi:10.16061/j.cnki.cn46-1076/c.2011.05.020

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Li, J., Li, W., and Shi, Y. (2021a). The impact of regional culture on the psychological characteristics, startup behaviors and regional economy of modern Chinese business gangs. *Front. Psychol.* 12, 732377. doi:10.3389/fpsyg.2021.732377

Li, J. (2007). One step ahead - a historical study of the early stage of Guangdong's reform and opening up. (in Chinese).

Li, S., Liu, J., and Kong, Y. (2021b). Pilot free trade zones and Chinese port-listed companies performance: An empirical research based on quasi-natural experiment. *Transp. Policy* 111, 125–137. doi:10.1016/j.tranpol.2021.07.022

Lin, J., Cai, J., Han, Y., Zhu, H., and Cheng, Z. (2016). Culture sustainability: Culture quotient (CQ) and its quantitative empirical application to Chinese cities. *Sustainability* 8, 1235. doi:10.3390/su8121235

Liu, J., and Gao, Y. (2022). The role of education in regional repositioning: Experiences of hainan. *Asia Pac. Educ. Rev.* 23, 87–99. doi:10.1007/s12564-021-09717-6

Liu, W., and Yao, Q. (2021). Theorizing Belt and Road construction mode from institutional and cultural perspectives. *J. Geogr. Sci.* 31, 623–640. doi:10.1007/s11442-021-1862-8

Luo, C. D., and Tian, Y. Z. (2016). The measurement model construction and empirical study on the effects of offshore duty-free policy on Hainan tourism economy. J. Discrete Math. Sci. Cryptogr. 19, 569–590. doi:10.1080/09720529.2016. 1178907

Malinowski, B. (2013). A scientific theory of culture and other essays. London: Routledge. doi:10.4324/9781315824109

Peng, P., Yang, Y., Lu, F., Cheng, S., Mou, N., and Yang, R. (2018). Modelling the competitiveness of the ports along the Maritime Silk Road with big data. *Transp. Res. Part A Policy Pract.* 118, 852–867. doi:10.1016/j.tra.2018.10.041

People's Government of Hainan Province (2018). Notice about visa free policy for 59 countries. Available at: http://en.hainan.gov.cn/englishgov/Policies/202201/c33e5a7ee5a0426cb933b900b044ab86.shtml (Accessed August 30, 2022).

People's Government of Hainan Province (2020). Statistical bulletin of national economic and social development of hainan province in 2019. Available at: https://www.hainan.gov.cn/hainan/ndsj/202003/ a03a4d8c72184b6b867bea6e70aa25b3.shtml (Accessed August 29, 2022).

Qi, F., Wu, Y., Wang, J., and Wang, Q. (2021). China's hainan free trade port: Medical laws and policy reform. *Front. Public Health* 9, 764977. doi:10.3389/fpubh. 2021.764977

Qi, Y. (2018). "New targets of hainan: From free trade zone to free trade port with Chinese characteristics." in Conference Proceedings of 2018 World Special Economic Zone Development(Shenzhen) Forum:Restarting Reform and Opening-up(Chinese & English). 53-54–381-383.

Rottleb, T., and Kleibert, J. M. (2022). Circulation and containment in the knowledge-based economy: Transnational education zones in Dubai and Qatar. *Environ. Plan. A* 54, 930–948. doi:10.1177/0308518X221077105

Schumpeter, J. A. (2021). The theory of economic development. London: Routledge. doi:10.4324/9781003146766

Scott, A. J. (2017). "A perspective of economic geography," in *Economy: Critical* essays in human geography, 3–23.

Shi, S., Huang, K., Ye, D., and Yu, L. (2014). Culture and regional economic development: Evidence from China. *Pap. Reg. Sci.* 93, 281–299. doi:10.1111/pirs.12114

Tang, Y., Hong, K., Zou, Y., and Zhang, Y. (2021). Impact of emotional perceived value on the uncertain evolution of the housing bubble. *Mathematics* 9, 1543. doi:10.3390/math9131543

The State Council (2018a). Guiding opinions of the central committee of the communist party of China and the state Council on supporting Hainan's comprehensive deepening of reform and opening-up. Available at: http://www.gov.cn/zhengce/2018-04/14/content_5282456.htm (Accessed August 29, 2022).

The State Council (2018b). Notice of the state Council on issuing the overall plan for the China (hainan) pilot free trade zone. Available at: http://www.gov.cn/ zhengce/content/2018-10/16/content_5331180.htm (Accessed August 29, 2022).

The State Council (2020). The central committee of the communist party of China and the state Council issued the "overall plan for the construction of hainan free trade port. Available at: http://www.gov.cn/zhengce/2020-06/01/content_5516608.htm (Accessed August 29, 2022).

Tian, M., Rohlfer, S., Wu, Y., and Yan, H. (2022). Does confucian cdlture prom ote innmvation ? an empirical of a leading organization in the field**. *mrev.* 33, 82–107. doi:10.5771/0935-9915-2022-1-82

Tylor, E. B. (2010). Primitive culture: Researches into the development of mythology, philosophy, religion, art, and custom. doi:10.1017/CBO9780511705960

Wan, Z., Zhang, Y., Wang, X., and Chen, J. (2014). Policy and politics behind shanghai's free trade zone program. *J. Transp. Geogr.* 34, 1–6. doi:10.1016/j. jtrangeo.2013.10.015

Weber, M. (2016). "Die protestantische Ethik und der "Geist" des Kapitalismus," in Neuausgabe der ersten Fassung von 1904-05 mit einem Verzeichnis der wichtigsten Zusätze und Veränderungen aus der zweiten Fassung von 1920. Herausgegeben und eingeleitet von Klaus Lichtblau und Johannes Weiß. Editors K. Lichtblau and J. Weiß Wiesbaden (Springer Fachmedien). doi:10.1007/978-3-658-07432-6

World Bank (2018). *Doing business*. Available at: https://www.worldbank.org/en/programs/business-enabling-environment (Accessed August 7, 2022).

Yan, G., and Liu, D. (2011). *History of social development in hainan (volume I)*. Beijing: Guangming Daily Publishing House. (in Chinese).

Yang, B. (2012). Confucianism, socialism, and capitalism: A comparison of cultural ideologies and implied managerial philosophies and practices in the P. R. China. *Hum. Resour. Manag. Rev.* 22, 165–178. doi:10.1016/j.hrmr.2012. 01.002

Ye, P., Zhang, H., Ma, S., Yang, F., and Li, Y. (2022). A knowledge map study of an application of a Smart land planning free-trade zone and China's contribution. *Land* 11, 909. doi:10.3390/land11060909

Yeung, H. W. (2003). Practicing new economic geographies: A methodological examination. Ann. Assoc. Am. Geogr. 93, 442–462. doi:10.1111/1467-8306.9302011

Zhan, Y., and Gu, R. (2022). Knowledge visualization analysis of international economic geography research. *Trop. Geogr.* 42, 706–715. doi:10.13284/j.cnki.rddl. 003482

Zhang, L., Li, G., Zhu, L., and Guo, H. (2019). Construction and service demonstration of Hainan remote sensing big data platform. *Yaogan Xuebao/ Journal Remote Sens.* 23, 327–335. doi:10.11834/jrs.20198193

Zhang, S., Liu, W., and Liu, X. (2012). Investigating the relationship between protestant work ethic and confucian dynamism: An empirical test in mainland China. J. Bus. Ethics 106, 243–252. doi:10.1007/s10551-011-0993-8

Zhang, X., Geng, Y., Shao, S., Song, X., Fan, M., Yang, L., et al. (2020). Decoupling PM2.5 emissions and economic growth in China over 1998–2016: A regional investment perspective. *Sci. Total Environ.* 714, 136841. doi:10.1016/j.scitotenv. 2020.136841

Zhao, J. (2020). Influencing factors of urban architectural style in China: A case study of danzhou city, hainan province. *IOP Conf. Ser. Earth Environ. Sci.* 510, 062003. doi:10.1088/1755-1315/510/6/062003

Zhao, X., and Jia, P. (2019). Multi-planning integration advancing coastal zone management: A case study from hainan island, China. *J. Coast. Conserv.* 23, 869–875. doi:10.1007/s11852-018-0667-0

Zhiyuan, G., and Rui, H. (2020). Policy text analysis of hainan free trade zone (port) from the perspective of policy tools. *IOP Conf. Ser. Earth Environ. Sci.* 608, 012026. doi:10.1088/1755-1315/608/1/012026

Zhou, W., and Tang, L. (2019). Compendium of hainan general history. Beijing: People's publishing house. (in Chinese).

Zhu, H., and Situ, S. J. (2001). Areal diffusion and integration of the frontier pioneering culture in Hainan Island. Dili Xuebao/Acta Geogr. Sin. 56, 105–110.