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An Empirical Analysis of the Factors Influencing Innovative Performance in the Sea Rice Market Industry in China

Toong Hai Sam[1]*, Hanlin Zhang[2], Yan Jing[3], Wang Yan[4], Wei Jie[5], Liu Jihu[6] & Asokan Vasudevan[7]

1,2,6,7. Faculty of Business and Communications, INTI International University, Persiaran Perdana BBN, Putra Nilai, Nilai, Negeri Sembilan, Malaysia. 1*Corresponding Author's Email: toonghai.sam@newinti.edu.my
3,4. Hebei Finance University, No. 3188, Hengxiang North St. Baoding City, Hebei Province, China.
5. Universitas Pendidikan Ganesha, Jalan Udayana No. 11, Singaraja, Bali, Indonesia.

Abstract

This study investigates the factors that influence innovative performance in China's Sea Rice Market Industry. To accomplish this, the agricultural technology and measures that Zhongnong (2018) implemented for sea rice planting and marketing will be analyzed to determine the factors that affect innovative performance. Using quantitative research methodology will demonstrate that agriculture is a profitable field of business, with sea rice being a notable example. A questionnaire-based data collection method will be employed to identify internal and external factors that can impact the innovative performance of sea rice. Following the study, a better understanding of the plan and the relationships should be attained. The survey design and methodology were primarily conducted in mainland China. It is suggested that the technology and concepts related to innovative performance products and services, such as sea rice, be widely disseminated. The contribution of this study is to guide individuals in the new era to innovate and stay up-to-date with emerging trends (Shi et al., 2019). Innovation is a crucial aspect of business development, and it is commonly accepted that it leads to increased productivity, profitability, and competitiveness. Innovative performance is affected by various factors, including government policies, internal factors, and external factors, such as market competition and demand (Luo et al., 2020). Furthermore, technological and organizational resources' availability and efficient use are important in fostering innovation. In the context of the agricultural sector, innovative performance is linked to introducing new products, services, and production methods, all of which contribute to increased efficiency and competitiveness (Yuan et al., 2021). Overall, it is important to understand the factors that impact innovative performance in the agricultural industry, such as China's Sea Rice Market Industry, to promote sustainable economic growth and development. By encouraging innovation, businesses can stay competitive and adapt to changing market conditions, thereby improving their overall performance (Jiang et al., 2019).

Keywords: *Innovative performance, Technology, Market, Enterprises, Sea Rice*

1. INTRODUCTION

Technological innovation has become a key driving force for agricultural economic development compared to other nations as China moves towards a knowledge economy. Technology development is strongly linked to national and individual prosperity and overall well-being (Sarwar, 2022). At present, innovation and technological innovation are inseparable, and the primary component of innovation has shifted from businesses to a new stage of combining production, education, and research. China's capacity for innovation is the primary competitive factor in its overall strength. The successful development of sea rice shows that effective growth of scientific and technological innovation capabilities can moderate the

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pace of economic growth, improve the financial system, and support the economy's sustainable growth (Zhao, Lin, & Liu, 2020).

As an emerging nation, China has already increased its spending on science and technology to strengthen its technical innovation capability and global competitiveness. Relevant management organizations have begun recognizing the crucial role of technological innovation in national economic and social development as economic development has shifted to a new standard (Wu et al., 2022). According to Zhang (2022), China is continuously improving its scientific research system's management, restructuring its scientific research system, and utilizing its scientific and technological resources, from the broad goal of establishing an "innovative nation" to the strategic directive of "rejuvenating the nation via science and education."

The sea rice industry takes innovative performance seriously, as it is a newly developed rice type that can be cultivated along the coastline. In this salinized and alkaline environment, nothing else can grow. The technology of sea rice makes it possible to cultivate rice in these abandoned areas, and after harvesting, the rice can absorb the saline and alkaline components of the soil. Ultimately, the land can revert to being useful for industrial or conventional agricultural purposes, as it is no longer saline and alkaline (Sun et al., 2022).

Due to the increasing frequency of extreme weather conditions caused by climate change, the prospects for most agricultural businesses that have not adopted large-scale production and processing are bleak. Science, favourable policies, market share, and technology can help cope with non-human and uncontrollable circumstances (Gao, 2022). Agricultural businesses can increase their level of science and technology by investing more in research and development, introducing cutting-edge production and processing machinery, and focusing on enhancing their innovation capabilities to transform them into a steady stream of creativity and productivity, thereby providing a high level of assurance of continuous production.

2. REVIEW OF THE LITERATURE

2.1 Technological innovation

Chinese Sea rice is a unique wild rice resource with exceptional salinity tolerance and high-stress resistance, making it a rare rice germplasm resource with distinct resistance advantages. This rice can grow in seashore tidal flats and saline-alkaline soil (Liang et al., 2020). Zhongnong Sea rice technology overcomes previous breeding techniques' limitations to create new rice types rapidly and consistently by employing the "Genome + Metabolome" paradigm of extensive data analysis. The "3 Nano System Sea Rice structure" study model has been developed to identify resistance genes, establish molecular markers, and accelerate breeding (Zhang, 2022). Due to its excellent characteristics, Chinese Sea rice has gained significant national and international interest. It is recognized as one of China's germplasm resources whose basic technology is restricted from export.

In some cases, land may be useless due to being overly acidic or alkaline (Hu et al., 2022). Although crops cannot grow in salinized soil, it is still land with mud and water (Dorr, 2021). Thus, theories were formulated to cultivate sweet sorghum and sunflowers due to their high salt tolerance (Bewtones and Aexon, 2021). After several failed experiments, the Zhongnong Sea rice technology team did not fear failure and continued testing (Wang et al., 2022). Han et al. (2021) developed a conclusive hypothesis to grow salt-resistant rice, which led them to try rice, an exceptional germplasm resource invented by Longping Yuan (Tian et

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al., 2021). The rice was cultivated with Butyric acid, which can lower blood sugar, and further trials were conducted, proving to be a success in several regions in China (Cai Qi, 2021). Technological innovation allows entrepreneurs to develop new enterprises and build competitive positions when incumbents' sources of competitive advantage degrade (Swendsen, Schweizer, and Moore, 2019). It substantially influences organizational populations due to market disruption, shifting resource priorities, testing organizational learning capacity, and altering the basis of competitiveness.

H1: Technology has a positive influence on innovative performance.

2.2 Government policy

Yu et al. (2022) argued that the motivation behind the invention should not solely be driven by profit, but profits should also serve as an indicator of the innovation's quality. Qian (2020) reported that the Zhongnong Sea rice team discovered an unexpected result during rice production, which caused the terrain to revert to traditional agricultural land after harvesting. This was due to the vegetation absorbing the salt and becoming alkaline, explaining why sea rice has many components (Wang et al., 2017). As a result, the land became usable again, as demonstrated by Team sea rice's purchase of 110,000 acres of land for 300 Chinese yuan per acre, which could be sold for 30,000 Chinese yuan per acre after consolidation (Bless, 2018), surprising the country (Shao, 2019).

During their business opportunity search, Team sea rice discovered a novel way to address the serious global issue of land salinization, which affects human food supply security (Zhao et al., 2021), and the loss of 20.7 billion kg of food due to the salinization of 130 million acres of agricultural land in China (Greiner et al., 2019). Pisinaras (2018) emphasized the importance of research and development of innovative agricultural technology and efficient land resource utilization to meet the increasing demand for food, resources, and the environment. This is crucial for stabilizing grain production capacity and preserving the dynamic equilibrium of arable land (Vengosh, 2019).

In pursuit of their business objectives, the Zhongnong sea rice team (2018) reinvented sea rice to discover the optimal solution, leading other agriculture businesses to create similar products (Krabi, 2019). Consequently, they developed a patent application and a new salt and alkali-resistant sea rice 2.0 variety (Ni, 2019), which can grow in coastal tidal flats and inland saline-alkaline soil, has a much greater salinity tolerance and is four times more salt-tolerant than standard saline-alkaline rice (Xu et al., 2020). This technology garnered national interest, and the heart of the technology was designated as China's restricted germplasm resources (Ullah, 2018).

Innovation-related policies are critical in ensuring that public benefit and general societal interest are reflected in private-sector decision-making. The government plays a vital role in securing and restoring information and data and fostering creativity through programs and initiatives such as protecting intellectual property rights, financial assistance for research and development, and collaborative research initiatives between universities and corporations (Department of Treasury, 2013).

H2: Government policy has a positive influence on innovative performance.

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2.3 Marketing environment

The Zhongnong sea rice team (2018) recognized that market testing is an effective approach to assess the innovative performance of new products, as it guarantees that at least some consumers will purchase the new type of rice (Zhang, 2021). While the Zhongnong sea rice team (2018) was aware of the health benefits and nutrient density of sea rice (Figure 3), convincing the majority of consumers of its blood sugar-lowering effects will require time (Kotula, 2020). Consequently, the Zhongnong sea rice team (2018) developed a marketing strategy to promote their products by collaborating with hospitals (Yu et al., 2022). The team identified a certified university laboratory to examine the components of sea rice, and upon receiving a positive test result, they proceeded to the university-affiliated hospital (Chen, 2018).

According to Zhongnong's collaborator, cited by Chun Xiu (2019), the hospital will distribute sea rice to patients. If it proves to be effective, patients will report on the product's efficacy and praise its quality. The innovative performance summary provided by land expert Kad Miri (2018) indicated that sea rice lowered the blood sugar levels of most patients. Therefore, this type of rice product should be produced in large quantities, and the innovative performance of sea rice is exceptional. Economic experts Heather Boushey and Helen Knudsen (2021) state that a competitive market environment is crucial for a thriving commercial economy. Economic foundations demonstrate that when firms compete for customers, lower prices, superior products and services, greater variety, and increased innovation are the result. Competition is not only necessary in goods markets but also in labour markets. Businesses must increase wages and improve working conditions to drive innovative performance and encourage staff retention.

H3: The marketing environment has a positive influence on innovative performance.

2.4 Project Success

Adherence to the laws of agricultural development is crucial for confronting cutting-edge agricultural science and technology and addressing the nation's urgent needs in the primary battleground of contemporary agricultural construction (Liu et al., 2019). Vigorous implementation of the innovation-driven development strategy is essential, prioritising maintaining national food security and using scientific and technical innovation in agriculture as the primary driver of agricultural progress (Wang & Liu, 2020). Strengthening the structural reform of the agricultural supply side is of utmost importance, with guidance and support for the development of modern agriculture.

Sea rice, as a product of the next new age, can serve as an excellent example, and enhancing its quality, productivity, and competitiveness is one of the significant objectives (Zhang et al., 2021). To achieve this, agricultural biotechnology must be developed and production ecology coordinated to support better seeds and the environment, enabling farmers to continually advance essential and pervasive technology (Liu et al., 2019). It is essential to enhance the capacity for independent innovation, speed up the transformation and application of agricultural scientific and technological achievements, and intensify scientific reform (Wang & Liu, 2020). Furthermore, technical systems and mechanisms must bolster the construction of the talent team, cultivating a large number of agricultural scientific and technological talents, increasing land output rate, resource utilization rate, and labour productivity, and realizing "grain storage in technology" (Li et al., 2022).

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2.5 Theoretical Exposition

The Chinese government aims to achieve self-sufficiency in essential food items to ensure food security (Zhang et al., 2020). The Zhongnong Sea rice project, which cultivates rice using seawater, could solve this challenge (Wu et al., 2021). The Yellow Sea, located near Jiangsu, Zhejiang, and Shanghai, is unsuitable for conventional rice cultivation due to poor water quality, high sand content, and yellow seawater (Jia et al., 2022). However, by planting sea rice, tidal flats spanning around 1,800 kilometres can be transformed into arable land for large-scale automated agriculture, providing an opportunity to create a new province for grain production (Wu et al., 2021). The labour costs for cultivating the land along the tidal flats are relatively low (Zhang et al., 2020). It is estimated that up to 27 million mu of land can be utilized to plant sea rice, which offers significant advantages (Jia et al., 2022).

2.12 Research Framework

The link between the independent variable ()government policy, marketing, and land salinization reorganizational technology) and the dependent variable (Innovative performance) is demonstrated as follows.

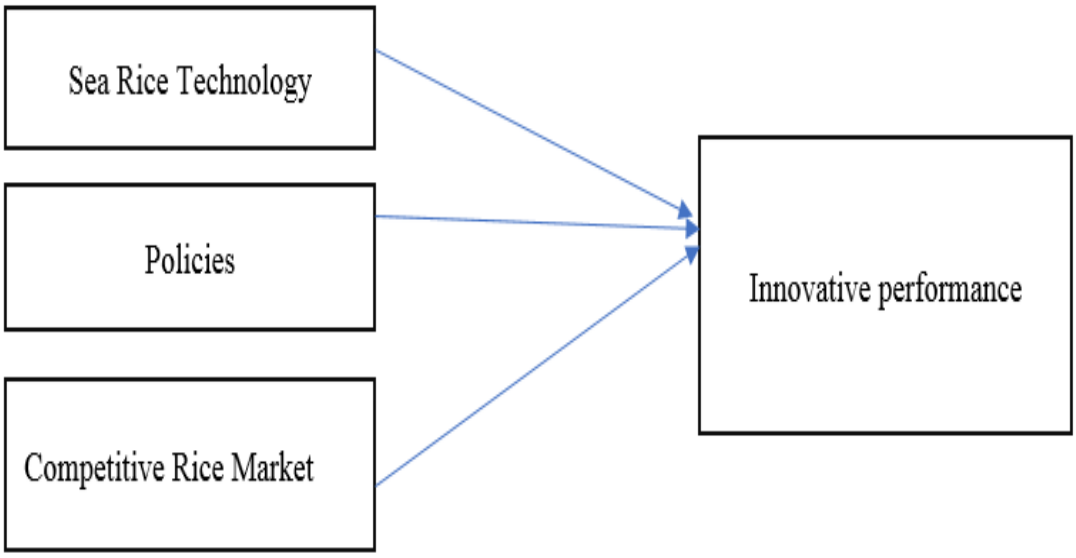

Figure 1: Theoretical Framework

3. METHODOLOGY

This study used a quantitative methodology (Shalaby, Elshennawn, and Sharhan, 2022). Questionnaires were delivered to participants online and in hard copy for this study. A non-probability sampling method was employed (Medina et al., 2019). The main population of this study consisted of 537 active personnel, such as frontline workers, from Zhong Nong Sea Rice Biotech middle management managers and top management executives. The target sample population is representative of the target population because it consists of individuals with the same features, nature, and sample size as the overall sample or population selected for the study. The estimated sample size was computed using the Krejcie and Morgan table based on the sample population of 557 individuals (Krejcie and Morgan, 1970). The required sample size was 200 participants.

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4. RESULTS

Table 1: Table of Demographic Profile

Variables		Frequency	Percentage
Gender	Male	73	55.7%
	Female	58	44.3%
Age	18-29	66	50.4%
	30-39	42	32.1%
	40-49	13	9.9%
	50 and above	10	7.6%
Income	RM3,000 and below	34	26%
	RM3,001-6,000	65	49.6%
	RM6,001-9,000	14	10.7%
	RM9,001-12,000	8	6.1%
	RM12,001 and above	10	7.6%
Years of services	Below a year	14	10.7%
	1-2 years	28	21.4%
	3-4 years	43	32.8%
	5-6 years	17	13%
	7 years and above	29	22.1%

Table 1 data shows that there were 131 participants in the study, with 55.7% male and 44.3% female. Most participants were 18-29 years (50.4%), followed by 30-39 years (32.1%). Regarding income, 49.6% of participants earned between RM3, 001-6,000, while 26% earned RM3, 000 and below. Only 7.6% of participants earned RM12, 001 and above. In terms of years of service, the highest percentage of participants (32.8%) had 3-4 years of service, followed closely by those with 7 years and above (22.1%).

4.1 Reliability test

Table 2: Result of Measurement Model

	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE Value
CM 1	0.790	0.809	0.867	0.567
CM 2	0.723			
CM 3	0.780			
CM 4	0.740			
CM 5	0.731			
GP 1	0.767	0.818	0.873	0.579
GP 2	0.793			
GP 3	0.734			
GP 4	0.802			
GP 5	0.703			
IP1	0.841	0.830	0.881	0.597
IP2	0.693			
IP3	0.766			
IP4	0.788			
IP5	0.769			
TC 1	0.800	0.809	0.884	0.604
TC 2	0.727			
TC 3	0.804			
TC 4	0.748			
TC 5	0.804			

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Cronbach's Alpha values for the variables are more than 0.7, indicating the reliability of the results. According to Erden AkI, the dependent and independent variables for the reliability test should have a Cronbach's Alpha value of at least 0.70. (2021). As all numbers derived from the variables are more than the 0.7 criteria, it is evident that the respondents' responses are trustworthy, and the analysis of the complete data set may proceed.

4.2 Regression Analysis

Table 3: Result of R square

	R Square	R Square Adjusted
IP	0.775	0.773

These three hypotheses predict the relationship between the independent variables of technology, government policy, and a competitive market. The objective is to discover if these independent factors positively affect the dependent variable, creative performance. Linear regression analysis is used to determine if there are any relationships between dependent variables (Cai et al., 2021). Table 3's R square value of 0.773 is explained by the fact that the independent variables alone can account for 77.3% of the variation in the dependent variable.

4.3 Correlations

Table 4: Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
CM -> IP	0.235	0.234	0.049	4.790	**0.000**
GP -> IP	0.357	0.363	0.049	7.261	**0.000**
TC -> IP	0.344	0.339	0.050	6.873	**0.000**

According to Table 4, the first IV, Technology (TC), has a significant and direct impact on innovative performance ($\beta = 0.344$, $t = 6.873$, $p = 0.000$). The second IV, Government policy (GP), significantly and directly impacts innovative performance ($\beta = 0.357$, $t = 7.261$, $p = 0.000$). The third IV, Competitive Rice Market (CM), directly impacts innovative performance ($\beta = 0.235$, $t = 24.790$, $p = 0.000$).

5. DISCUSSION

Research Objective 1: Examine the effect of technology on inventive performance in the Chinese sea rice market sector. This study aims to investigate the impact of technology on inventive performance in the Chinese sea rice market sector. The results of the statistical analysis reveal that technology has a significant influence on inventive performance. This finding is consistent with the conceptual understanding that technology is crucial in generating new ideas. Rice and other crops can provide a sufficient livelihood, but wise decision-making is necessary, and appropriate business research must be conducted (Jay, 2020; Zhang et al., 2021).

Chinese Sea rice is a unique and rare germplasm resource with exceptional salinity and stress resistance capabilities, and it can thrive in seashore tidal flats and saline-alkaline soil (Liang et al., 2022). The combination of technology and inventive performance has proven to be highly effective in this market sector.

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Research Objective 2: To investigate the influence of government policies on China's Creative performance in agriculture marketing. This study aims to investigate the impact of government policies on the creative performance of China's agriculture marketing sector. The statistical analysis reveals that government policies significantly influence inventive performance. The absence of sufficient financing and infrastructure the government provides can hinder scientific research and development activities. Sun et al. (2022) suggest that government policies are essential for creative performance and show a clear correlation between the two.

Policies also play a crucial role in innovative performance by providing the necessary knowledge on the systems required for filing an invention patent and securing innovation financing from the government or businesses. Understanding and complying with these policies are critical to succeed in the market (Amezketa et al., 2019). Several regions in China have distinct policies, such as the land salinization rearrangement business practised by the Zhongnong sea rice team (2018). However, it is uncertain if these lands have land indicators, which are similar to the ID of the land (Bless et al., 2018).

Research Objective 3: Examine the effect of a competitive market on the creative performance of Chinese firms producing sea rice. To investigate the impact of a competitive market on the creative performance of Chinese firms producing sea rice, it is found that competition does indeed promote inventive performance as everyone strives to be the first to introduce uniqueness. According to statistical analysis, although the correlation between competition and innovative performance is weak, it is still positively correlated. Thus, it can be concluded that competition positively impacts the inventive performance of Chinese firms producing sea rice.

In the current context of the information economy and economic globalization, business ecosystems have emerged as a new type of network organization that can help firms develop long-lasting competitive advantages and gain maximum benefits from open innovation. The business ecosystem has changed the game’s rules for innovation, and the interactions among enterprises within the ecosystem have evolved into a blend of collaboration and competition. This ecosystem provides firms with a new perspective from which they can better understand and manage their external environment and their competition and collaboration with other business organizations. (Niu et al., 2018; Zhang, 2019).

6. IMPLICATIONS

The study's findings were used to enlighten academics about the innovation-related factors affecting the success of the Chinese sea rice sector. Several researchers have examined this issue's related themes in past research articles. Nevertheless, little study has been conducted on the most pertinent variables to the sea rice industry. Technology, public policy, and a competitive market are three distinct elements that determine the efficacy of innovation. Other researchers may profit from this study's enhanced knowledge of these three aspects. It is intended that this research would be of greater service to researchers, especially those in the academic and educational fields. In addition to understanding the flaws and limits of existing research, academics can improvise new research. So, research contributes to the advancement of knowledge.

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6.1 Contributions toward the Sea Rice Industry (Theoretical)

The prevalence of saline-alkaline soil in underdeveloped regions indicates the need for improving rice planting techniques, which would benefit the agricultural planting structure, augment food production and revenue, and create job opportunities for local farmers. Saline-alkaline soil is unfavourable for plant development, but through the process of rice cultivation, soluble salts can be removed from tidal flats and saline-alkali land. Rice also has a physiological effect that helps reduce salt in the soil.

The cultivation of sea rice, which grows on saline-alkaline land, reduces soil salinity, enabling other crops to be grown and efficiently using the land. Applying rice straw to the soil can also help restore saline-alkaline land and improve soil organic matter. In the past, traditional farming methods were unsuccessful in producing crops in soil with salinities above three parts per thousand and alkalinities above pH9, making the land barren. However, with technological advancements, vast areas of "desolate land" have become available land resources, thanks to seawater rice, which also helps ensure food security (Deng et al., 2021; Li et al., 2019; Zhao et al., 2022).

6.2 Contributions toward the Nation and the World (Practical)

Sea ice increases grain production in China and significantly contributes to advancing ecological and environmental civilization by improving soil conditions and preserving the natural ecosystem. Sea rice fields act as an oasis in the desert and may influence salinity and soil conditions in the future. By planting desert sea rice, rice farming can increase soil activity and decrease soil salinity, resulting in better-tasting, more nutrient-dense rice that requires fewer pesticides. It is expected that the annual promotion area of selected sea rice will increase to 100 million Ares and the annual grain output will reach approximately 30 billion kg in ten years, which will feed an additional 80 million people (National Bureau of Statistics, 2021; Yu et al., 2020).

Technological progress is essential for social progress, and a competitive system is crucial in promoting technological progress. Developed capitalist nations have constructed successful competition systems that have contributed to their rapid increase in social output and technical progress. Antitrust has become the cornerstone of economic law, and every effort must be taken to monitor and regulate unfair competition, preserve market order, regulate market conduct, and protect fair competition and the legal rights and interests of companies and their clients (Zhang, 2021).

7. LIMITATION, THE RECOMMENDATION FOR FUTURE WORKS, AND CONCLUSION

7.1 Limitations of the Research

The research on Factors Driving the Innovative Performance of the Sea Rice Market Business in China found certain constraints. Initially, the data is difficult to get due to the short history of this technology. In 2018, advanced sea rice technology was adopted. Thus the literature is difficult to obtain. Hence, the research would become more challenging because it is difficult to locate past data sets. Second, resources are restricted since this technology holds confidential information, and some survey respondents do not speak English fluently. As a portion of the sea rice project's essential technology, history, and idea are not permitted to be written about, this imposed certain constraints on the study process. Moreover, some respondents do not speak, read, and write English fluently, as indicated by the fact that 20% of

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respondents have a high school education or less, so the questionnaire's results may not be 100 per cent accurate. However, non-native English speakers are guaranteed a translated version of the survey, so they carefully complete it. Lastly, time is limited because this industry is entirely new. As a result, there are fewer independent variables than anticipated. Even if these independent factors are sufficient for statistical studies, more variables might still impact inventive performance.

7.2 Recommendations

A fair performance evaluation plan is a stimulant for business operations based on the sea rice sector, allowing the innovative-minded organization to fully mobilize its personnel's initiative. Employees' personal goals should be as closely linked with the company's goals as feasible if the organization's goals are to be realized. Creating innovative performance requires the implementation of crucial acts, such as the development of technology, adherence to and deeper exploration of government policies, and the pursuit of market possibilities. According to the numerous start-up business managers, the author interviewed for the consulting assignment, employees should be acutely aware of the importance of performance reviews and have begun progressively implementing a performance management strategy and reward system suited to their businesses.

7.2.1 Recommendations on Technical Perspective

The primary factors of technological innovation efficiency are technical efficiency and the rate of technological progress. Management status and size affect technological efficiency, whereas technological innovation and optimization affect technological development rate. Beyond breakthroughs in manufacturing processes, items, organizational structures, and institutions. Technological innovation has a broader scope.

Technological innovation should be understood as the process of developing new knowledge through the study of novel phenomena, generation of novel concepts, investigation of novel methodologies, formulation of novel ideas, creation of new markets, application of novel technologies, production of novel products, and adaptation of novel organizational models. In a specific business such as sea rice, organizations such as Zhongnong Sea Rice BioTech should promote technical innovation vigorously. After the new rice variety is developed, the home market and the global food situation will benefit.

7.2.2 Recommendations on Government Policy Perspective

On the one hand, it is strongly advised that the government utilize financial subsidies to help enterprises improve their innovation performance. Financial contributions include interest, loss, ex-ante, and ex-post subsidies. These subsidies can successfully offset the economic shortcomings of enterprises and encourage them to engage in R&D and creative endeavours. National contributions have a significant beneficial influence on the innovative capability and performance of enterprises. Owing to the magnitude of the funding level, there is often a substantial period effect on the extent to which a company contributes to technological innovation due to government financial subsidies for scientific research.

Research the link between government financing and corporate innovation investment using dynamic and static models. In contrast, the government may support company innovation through tax incentives. The kind of preferential tax policies, which include tax reduction, tax exemption, export tax rebate, and levy first and then refund, is extremely flexible and is one of the primary ways the government encourages enterprises to engage in R&D and innovation.

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The government gives firms a variety of advantageous tax schemes to assist them in overcoming their financial difficulties while investing in innovation activities and increasing their R&D expenditures.

7.2.3 Recommendations on a Competitive Market Perspective

The government should enhance market regulation and establish a competitive market environment. In addition, equity compensation for top employees is not the "master key" to an organization's "gateway to inventive success." When market competition weakens, the benefits of equity incentives for key people cannot be adequately implemented. To boost innovation performance, companies should base their judgments on whether to provide critical employees equity incentives and how to offer incentives in their unique industry-competitive environment.

7.3 Conclusion

The primary objective of this study was to identify and explore the factors that impact the innovative performance of the sea rice industry in China. According to the statistical analysis, technology, government policy, and a competitive market are the three most essential components. The purpose of this study is to find a plausible explanation for both the independent and dependent variables. The survey sampled 283 respondents now employed by the Zhongnong Sea Rice Biotech Company in Shenzhen, China.

Before proceeding with a large-scale investigation, the feasibility and reliability of the research were confirmed by a pilot study. Subsequently, statistical tests were conducted using analytic approaches such as ANOVA, Linear regression, beta coefficient, and hypothesis testing. All hypotheses were ultimately accepted since the outcomes were flawless. According to statistical analyses, technology, government policy, and competitiveness are the independent variables that influence innovative performance.

Although their beta coefficient values are not excessively large, their relationships with the dependent variable of innovative performance in multiple divisions are relatively strong. The fifth chapter presented recommendations, contributions, limits, and future foci following statistical analysis.

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