# Digital Revolution in Food Entrepreneurship: Perspectives from Select Small and Micro Food Enterprises

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**Abstract**. The study focused on profiling four companies located in Henan and Tianjin, China, namely Henan Little Jade Foods, The Garden of Clear Fragrance Foods, Tianjin Joint Venture Foods, and Tianjin the EatSmart Way Technology Development Company. These companies integrate digital technologies into their business operations, and the research aims to describe their profiles and the integration of digital technologies as a basis for strategic planning. The profile descriptions include details such as the nature of business, products and services offered, years in the business, existing market, distribution platforms, and business or asset size as of 2022. Additionally, the study delves into the use of digital technologies in management and decision-making, marketing, production/operations, and finance within these small food enterprises. The findings indicate strong agreement among respondents regarding the benefits of digital technology in various business areas. For instance, in management and decision-making, respondents acknowledged improvements in collaborative culture, effective monitoring of key performances, and exploring new markets. In marketing, digital technology was seen as beneficial for broadening customer bases, developing customer-centered strategies, and building competitive brands. Similarly, in production/operations and finance, digital technologies were recognized for enhancing risk assessment, innovation, customer relationship management, financial stability, and sales performance. However, challenges such as dysfunctional decision-making, cybersecurity concerns, staff training, regulatory compliance, and digital investments were also highlighted. The study emphasizes the need for further research to address the challenges faced by micro and small food businesses in digital integration. Recommendations include focusing on technical resources, staff training, centralized data management systems, and strategic planning to ensure sustainability and productivity in a digitalized marketplace. This study provides insights into the opportunities and challenges of integrating digital technologies in micro and small food enterprises, laying the foundation for strategic planning and sustainable growth in the industry.

## 1. Introduction

The Digital Revolution saw the advent of technology in human lifestyle. The Digital Revolution is best known for its introduction of the transistor (1947-1949), computer (1980s), World Wide Web (1990s), mobile phones (2000s), Internet (2010 and beyond) (Rouse 2017). However, it was not just an introduction of technological gadgets that replaced traditional apparatuses. More importantly, as the name suggests, it revolutionized, by expanding the frontiers of human capacity. With Digital Revolution, technology and expansion of human capacity went together.

In this study, the researcher takes keen interest on the Digital Revolution in relation to food entrepreneurship. How indeed has food entrepreneurship been revolutionized over the years? China's food sector is among industries adapting digital transformation by embracing advanced technologies like 5G and Artificial Intelligence (AI) to improve their businesses.

According to Zhang (2016), "As for food enterprises, to provide qualified food for the society should be the minimum requirement and their first prerequisite." This is resonant with the characteristic of firm structure and performance (Moschella, et.al, 2018). As Digital Revolution enters the picture, it is seen to play a bigger role in the country's steps toward rural vitalization and agricultural modernization (Aisyah, 2021). In this regard, Zhang (2016) points out that "food enterprises should take initiatives to shoulder the social responsibility, which is the inevitable choice for food enterprises adapting to social development, improving competitiveness in global market, and expanding the space for existence and development."

The study of Chen, et.al (2021) gives an interesting perspective on the conditions of food enterprises from political and economic, social, and technological aspects. For the political and economic aspect, Chen, et.al (2021) point out to "indicting that China advocates a healthy diet for all the people and the per capita income keeps growing." This would allude to the need to assure food safety alongside the financial stability of food enterprises in China. Chen, et. al (2021) contend that "As increasing per capita income level in China, Chinese's daily requirements shift to higher quality lifestyle. Among those requirements to achieve quality lifestyle, the need for diet expanded from better flavor to healthier diet demands." In this context, food enterprises are not just preoccupied with ensuring quality food production; the political and economic aspect exercise an extensive influence challenging food enterprises to develop themselves into a locally and globally competitive enterprise that meets the standards of higher quality lifestyle. For the social aspect, Chen, et.al (2021) refer to "people's attitudes towards healthy fast food [is] also [becoming] positive with the increase of the education level." This would allude to the correlation

between food preference and educational attainment. On a greater scale, this raises at the fore of discussion how changes in the lifestyle of consumers also determine their preferences in food and this is something that food enterprises have to be constantly and continually aware and perceptive. In some studies, (Ortega, et.al, 2011, and Liu, et.al, 2015 as cited in Chen, et.al, 2021), the concern on food safety overlaps with the nutritional knowledge of consumers. As a matter of fact, "Chinese customers are willing to pay higher prices for food with certification." This concern shows that consumers are actually proactive and not just passively purchasing food; hence, all the more reason for food enterprises to take their corporate social responsibility seriously.

The social aspect, with Digital Revolution, is now intertwined with the technological aspect. Chen, et.al (2021) assert that, "various new fresh-looking technologies and the promotion of supply chain also provide a good foundation for the fast food industry." In this regard, Digital Revolution is helping food enterprises meet changing preferences and changing demands in food production and food safety. Moreover, "New media not only push the development of healthy food industry, but also determine the direction of the development (Chen, et.al, 2021)." However, with fierce market competition, the direction of the development among food enterprises heavily depend on the strategies they employ. Chen, et.al (2021) identify some of these strategies: "Some companies choose to predict the trends by developing new technology. Some companies choose to lead the trend by producing their own production line and set of star product. Some companies still invest and believe in the power of new media." From these strategies, it can be gleaned that preparedness of food enterprises and the strength and stability of their company structure to weather the challenges and address them promptly goes undeniably vital.

It can be asked, however, why does the researcher focus more on micro and small food enterprises? Why does he not focus more on large companies? With the continuous development of small and medium-sized enterprises (SMEs) in China, "as of late 2022, the number […] exceeded 52 million (CNIPA, 2023)," which shows the proportion and importance of SMEs in China's economy. To have an in-depth approach of this study's problem, the researcher has selected four enterprises, two micro and two small food enterprises. The micro enterprises are Henan Little Jade Foods Co. and The Garden of Clear Fragrance Foods Co. The small enterprises are Tianjin Joint Venture Foods Co., and Tianjin the EatSmart Way Technology Development Co. A more thorough description of these enterprises are found in the succeeding chapter, under the Locale of the Study. As the food entrepreneurship in China still undergoes evolution, this time, heavily influenced by the Digital Revolution, it is only proper to inquire into the trajectories of the said industry. How do food enterprises respond to the challenges of the Digital Revolution? How do food enterprises make use of these responses to their advantage for sustainability in the future? The researcher's interest,

in particular, for micro and small food enterprises offers concrete perspectives given its significant number and contribution to the Chinese economy. It is with these thoughts and inquiries that the researcher builds his study.

## 2. Methodology

This study adopts a quantitative-descriptive research design to understand the impact and challenges of the application of artificial intelligence on enterprise management. McCombes (2019) believes that descriptive research accurately and systematically describes a group, situation, or phenomenon. Descriptive methods require more than just data collection, and should provide the true meaning of the obtained data based on the research objectives.

### 2.1. Sampling Procedure

The researcher used purposive sampling, particularly, homogeneous sampling. "Homogeneous sampling aims to reduce variation, simplifying the analysis and describing a particular subgroup in depth (Nikolopoulou, 2023)." Moreover, "units in a homogeneous sampling share similar traits or specific characteristics—e.g., life experiences, jobs, or cultures (Nikolopoulou, 2023)." In this study, all the respondents are employees in food enterprises, specifically, general and operations managers, differentiated only by the type of enterprise they work in. The researcher's choice of respondents are prompted by the following criteria: equal representation of respondents from the four companies (25 respondents each), respondents have to be employees of the four enterprises for at least 1 year, and the job descriptions of respondents include direct interaction with digital technologies in company operations. These criteria alongside the researcher's own background with the operations of micro and small food enterprises contribute to a holistic perspective on the study.

### 2.2. Respondents

The respondents of this study come from the selected micro and small food enterprises. The researcher has chosen two small food enterprises namely, Tianjin Joint Venture Foods Co., and Tianjin the EatSmart Way Technology Development Co., and two micro food enterprises namely, Henan Little Jade Foods, Co., and The Garden of Clear Fragrance Foods, Co. The researcher chose 25 respondents from each company bringing the total number of respondents to 100. The 25 respondents from each company are workers, supervisors, managers, and Chief Executive Officers (CEO).

**Table 1** *Distribution of the Participants of the Study*

| Company | Nature of Enterprise | Number of Respondents |
|---|---|---|

| Henan Little Jade Foods Co. | Micro | 25 |
| The Garden of Clear Fragrance Foods Co. | Micro | 25 |
| Tianjin Joint Venture Foods Co. | Small | 25 |
| Tianjin the EatSmart Way Technology Development Co. | Small | 25 |
| Total | | 100 |

## 3. Results and Discussion

The profile of the four food enterprises shows that they have been in operations as micro and small food entrepreneurs with products and services catering to the local, national and international markets, with a minimum of 9 years and a maximum of 20 years in the business. Taobao is commonly their platform supplemented by Jindong and Pinduoduo as they provide their products and services. With the integration of digital technologies, the four food enterprises, though micro and small in nature have earned above 10 million RMB with actual figures amounting to hundred millions RMB.

As regards the area on productions/operations, the respondents strongly agreed in the following item statements: "facilitated the implementation of more efficient risk assessment and risk mitigation, ushered innovation in the company, facilitated efficient transitions from a traditional mode to modernized mode of production, more efficient customer relationship management, and connected the company better to the community." In the area of finance, the respondents strongly agreed to all the item statements indicating "digital technologies as enablers, help, and facilitator to their companies' more stable financial plans, transparency, investors, and better performance of sales in the market and better alternative mode of payment by customers." In terms of challenges that the respondents encountered, they strongly agreed in the areas of management and decision-making and finance, however, only agreed in the areas of marketing and productions/operations. The challenges that appear to be of great concern deal in the area of management and decision-making are "misalignments in decision-making, incapacity of companies because of intense market saturation, struggles to ensure privacy and ethical data." In the area of finance, the respondents strongly agreed that digital technologies caused "confusion and struggles due to lack of preparedness on matters like digital economy, cyber threats and attacks, financial management software, and digital investments." As regard the area of marketing, the respondents agreed that digital technologies brought "confusion because of lost control over customer interaction, inadequately trained employees, and distrust among customers." They also agreed that for

productions/operations, digital technologies brought internal conflicts due to different perspectives of digital interpretation and that there are struggles in complying with regulatory policies."

## 4. Conclusions

Based on the results of the study, the following conclusions are drawn:

The four food enterprises chosen as respondents for this study have a profile which represent micro and small food enterprises able to compete in the market reflected in their business or asset size with long years of existence in the marketplace aided by digital technologies in their products and services.

Micro food enterprises are less aggressive and more hesitant in their apprehension of digital technologies to food enterprises as they are more vulnerable and less resilient in addressing risks but they all find digital technologies helpful to their company's operations.

Respondents from both micro and food enterprises agree that data analysis is crucial and essential to the effective and efficient digital integration among food enterprises. Moreover, the respondents pointed out that the inadequacy in technical resources and knowledge among employees is a challenge for food enterprises, significantly affecting their performance alongside digital integration. In summary, Chinese enterprises should strengthen their competitiveness, improve productivity, innovate continuously, make full use of government policy support and achieve sustainable development during the period from 2024 to 2033, in order to cope with the ever-changing market environment and challenges, and to achieve stable growth in the long term.

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