Development status and suggestions for e-commerce platform of traditional Chinese medicine in Henan Province

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Abstract. With the further implementation of the "Internet plus" and "healthy China 2030" national strategy, the development environment of the Chinese herbal medicine industry has improved. In order to accurately understand the development situation of Henan Province's e-commerce platform of traditional Chinese medicine (TCM) and promote the development of the industry of TCM, this paper investigated the planting situation of TCM, the basic situation of Chinese medicinal farmers, the demand for technical services and the use of e-commerce platform of TCM in the main planting areas of Henan Province by means of on-site visits, questionnaires and expert interviews. The results showed that the development of E-commerce of TCM in Henan Province was still in the extensive stage, and the development of E-commerce was lagged behind. Therefore, this paper put forward that Henan Province's drug administration departments should actively promulgate supporting policies to establish a standardized and modern distribution system of TCM seamlessly joined by both producers and sellers, set up public trading platform and modern logistics distribution system of TCM E-commerce, and adopt the policy of assisting agriculture by science and technology to promote the communication between farmers and technical experts.

1. Introduction
In china, Henan Province is the hometown of Zhang Zhongjing. With convenient transportation, it has a long history of traditional Chinese medicine (TCM) culture. The variety, output and planting area of TCM were in the forefront of the country. So, it has a Yuzhou specialized market of TCM, who has been approved as one of 17 specialized markets of TCM in China. However, some reports [¹-³] suggest that there were many problems in the specialized market of TCM, such as low entry threshold, uneven quality of personnel, loose management, poor hygiene, disorderly competition in the market and unclear supervision subjects, which directly affect the quality of TCM. Under the technical background of "Internet+" and big data, new business forms such as e-commerce have been rising constantly, which has impacted the specialized market of TCM. Therefore, the author had investigated the current situation of the transaction of TCM market and the development of electronic commerce platform of TCM in Henan Province, combed the key problems that need to be solved in the development, and put forward some suggestions to provide decision-making basis for the development of electronic commerce of TCM in Henan Province.

2. Methods

⚫ Documentation method
By means of literature search, the current situation, existing problems, development trend, information level and e-commerce development of traditional Chinese medicine industry in China and Henan Province were retrieved.

- Expert interview method
By means of special interview, we consulted the experts of Henan University of Traditional Chinese Medicine, Henan Science and Technology Department, Nanyang Science and Technology Bureau and Luoyang Kangxin Traditional Chinese Medicine Decoction Co., Ltd. to understand the situation of electronic commerce of TCM in Henan Province and listen to opinions and suggestions.

- Questionnaire survey
According to the feedback from expert interviews, the questionnaire was designed by using the questionnaire Star software to conduct an online survey on the development and using of e-commerce in Henan Province.

- Field visits
Field visits were conducted in towns and cities of Henan Province to survey the planting area, varieties, yields and sales of TCM of recent years in various regions, so as to give guidance to the planting situation of TCM.

- Mathematical statistics
The collected data was statistically processed.

3. Contents and results

- Basic information of the respondents
From the age distribution of the respondents, the majority of them were under 40 years old, accounting for 89.95% of the total number. These people were skilled in using smartphones to buy online and accepted new things quickly. From the cultural level of the respondents, most of them have college education or higher. From the native place of the respondents, 87.23% of them came from Zhumadian, Jiaozuo, Shangqiu, Puyang and Nanyang. Most of these areas were the main planting areas of TCM. Farmers were more concerned about the development information of traditional Chinese medicine industry and wanted to know more about the development of electronic commerce of TCM.

- Internet usage of the respondents
The results showed that the respondents mainly used the Internet to watch videos, chat, watch news and information, shop online, listen to music and other activities, among which online shopping ranked 4th, indicating that online shopping was the main use of the Internet for the respondents. (see table 1).

| Options                                | Proportion |
|----------------------------------------|------------|
| See the video                          | 60.05%     |
| Listen to the music                    | 35.05%     |
| Play games                             | 14.4%      |
| Get news                               | 48.64%     |
| Learn financial management knowledge   | 4.08%      |
| Chatting                               | 50.54%     |
| Online shopping                        | 45.11%     |
| Open online shop                       | 1.09%      |
| Others                                 | 10.87%     |

- Current Situation of Planting Area, Variety, Yield, Sale and Planting Technology of TCM
The survey found that most of the areas planted TCM, mostly sporadically, while the large-scale planting was less, accounting for only 24.27%. The main varieties planted were *dioscoreae rhizoma*, *lonicerae japonicae flos*, *chrysanthemi flos*, *paeniae radix alba* and more than 20 other TCM, which were suitable for planting in Henan Province (see figure 1). The sale mode of TCM mainly relied on
the farmers themselves to contact the purchaser or the purchaser to purchase directly from the farmers' home. Only 7.77% of the sales through the Internet, so the sales mode was relatively blocked, and it was easy to follow the trend of planting and unsalable phenomenon (see table 2). The planting management were extensive and backward, with only 7.77% of them equipped with technicians to guide planting, and 2.91% of them employing technical experts to guide planting.

![Figure 1. Planting varieties of TCM.](image)

**Table 2. The sale mode of TCM.**

| Options                                 | Proportion |
|-----------------------------------------|------------|
| The purchaser to purchase directly from the farmers' home | 40.78%     |
| The farmers themselves to contact the purchaser | 44.66%     |
| Poor sales when production is large     | 17.48%     |
| Sales through the Internet              | 7.77%      |
| Not clear                               | 35.92%     |

- Respondents' understanding and participation of e-commerce platform of TCM
  The survey found that only 18.75% of the respondents had purchased or sold TCM online. Among them, 81.16% chose Taobao and other popular e-commerce platforms to buy, while only 17.39% purchased chose Chinese herbal medicines websites such as Drug Bo Mall and China Pharmaceutical Material Network, which also had the trading function of TCM. This showed that on the one hand, TCM as medicines, people generally believed that it was difficult to guarantee the quality of online purchases, on the other hand, it also showed that people have a low degree of understanding and participation in the e-commerce platform of TCM (see table 3). However, people were not disgusted with the promotion and application of a special e-commerce platform for traditional Chinese medicines. 62.77% of the respondents would actively use it when all conditions were ripe. 32.61% of respondents think that the use of e-commerce platform for traditional Chinese medicines would bring convenience. (see table 4).

**Table 3. The situation of purchased or sold TCM online.**

| Options                                                      | Proportion |
|--------------------------------------------------------------|------------|
| Taobao and other popular e-commerce platforms                | 81.16%     |
| Chinese herbal medicines websites such as Drug Bo Mall       | 17.39%     |
| Drug Bo Mall and China Pharmaceutical Material Network       | 8.7%       |
| Not clear                                                    | 8.7%       |
Table 4. Promotion and application of TCM e-commerce platform.

| Options                                      | Proportion |
|----------------------------------------------|------------|
| Convenient and Healthy                       | 32.61%     |
| Too risky and unreliable in transportation   | 4.62%      |
| Actively use when all conditions were ripe   | 62.77%     |

- **Expectations and Current Difficulties of TCM E-commerce Platform**

The survey results showed that the respondents generally hoped that the e-commerce platform of TCM could provide quality inspection, traceability information, logistics transportation, planting technology and price guidance services, 90.22% of them believed that providing quality inspection services was particularly important. The main reason was that the current market of TCM was mixed and inconsistent, and the quality was not uniform. How to build a mass accredited quality inspection platform should be the main problem to be solved in the electronic commerce platform of TCM (see table 5). There also have many other problems, such as the backward concept of farmers' e-commerce, the backward construction of rural network infrastructure, the backward logistics service system in rural areas, the difficulty in establishing traceability system of TCM (see table 6).

Table 5. Expectations of TCM e-commerce platform.

| Options                                      | Proportion |
|----------------------------------------------|------------|
| Traceability information                     | 70.11%     |
| Quality inspection                           | 90.22%     |
| Logistics transportation                     | 55.16%     |
| Planting technology                          | 53.53%     |
| Price guidance                               | 54.62%     |
| Supply and demand information management     | 49.18%     |
| Others                                       | 8.7%       |

Table 6. Current Difficulties of TCM e-commerce platform.

| Options                                                      | Proportion |
|--------------------------------------------------------------|------------|
| The backward concept of farmers' e-commerce                  | 57.61%     |
| The backward construction of rural network infrastructure    | 44.02%     |
| The backward logistics service system in rural areas         | 47.28%     |
| The quality of TCM is difficult to guarantee                 | 69.02%     |
| The difficulty in establishing traceability system           | 56.52%     |
| Backward planting technology of traditional Chinese medicine and so on | 9.51%     |

- **Initiative of Chinese Medicine Professional and Technical Personnel to Participate in E-Commerce Platform of TCM**

The survey results showed that 57.34% of Chinese medicine professionals and technicians were willing to join the expert consultation database of e-commerce platform and provide technical services for farmers through the platform.

4. **Suggestions**

The competent pharmaceutical authorities of our province should actively introduce support policies to promote the rapid development of the Chinese herbal medicine industry, encourage large-scale cultivation of Chinese herbal medicines, promote the business model of “company + farmers + bases”, rely on enterprises, and rationally plan and plant varieties. Establish a Chinese herbal medicine planting base and implement order production. On the one hand, it can form a stable industrial chain, promote the increase of the scale and trade scale of the Chinese herbal medicine industry in our province, and help to cultivate leading enterprises; on the other hand, the implementation of order production can reduce the planting risks of farmers, ensure the income of farmers, and mobilize The
enthusiasm of the farmers has led to the cultivation of Chinese herbal medicines in our province.

Actively carry out the construction of Chinese medicine e-commerce trading platform and modern logistics distribution system, and explore the establishment of a standardized and modernized Chinese medicine material circulation system that seamlessly connects the production and marketing parties, so that the drug farmers can conduct information inquiry through the platform at any time, and establish an online Chinese herbal medicine trading center. Logistics centers, etc., make Chinese herbal medicine online shopping prosper in Henan Province. The e-commerce platform can provide technical services such as quality inspection of medicinal materials, traceability information of TCM, logistics and transportation, planting and processing technology and price guidance. It is especially important to provide quality inspection services.

Adopting an excellent talent policy, encouraging Chinese herbal medicine technicians to move to the grassroots level and publicizing and promoting the cultivation techniques of commonly used Chinese herbal medicines. The Chinese medicine e-commerce platform should widely absorb the technical experts of Henan Agricultural University, Henan University of Traditional Chinese Medicine, Henan Province and the Municipal Science and Technology Bureau, establish a communication platform between pharmaceutical farmers and technical experts, and adopt a one-to-one approach to communicate.

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References
[1] Wei J H, Tu P F, Li G et al 2015 Analysis of the status quo and development trend of Chinese traditional medicine agriculture in China Mod. Chin. Med. 17 94-8
[2] Cao H L and Wang W Q 2015 Current status and development suggestions of Chinese medicinal planting industry Chin. Mod. Med. 17 753-5
[3] Gao B 2013 Status quo and objectives of traditional Chinese medicine agriculture development in Henan Province Henan Agricult. 1 49-50