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Presenting an Effective Innovative Human Capital Model forKnowledge-Based Herbal Pharmaceutical Companies with an Emphasis on the Future Management Strategy of Hygiene and Health

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Abstract

Purpose: Effectiveness of innovative human capital performance of knowledge-based herbal pharmaceutical companies and adopting forward-looking strategies to achieve it is important. The aim of present study is to provide an effective innovative human capital.

Method: Research approach is mixed. Targeted sampling was done with 15 experts in the health sector and managers of knowledge-based herbal medicine units in the country. For model testing, 169 questionnaires were collected from the researchers of knowledge-based units of herbal medicine. Data analysis for model discovery is based on grounded theory and structural equations for model testing.

Findings: The model with six main dimensions (market-oriented dominance), (innovative human capital), (herbal therapy cultural environment), (weakness of policy making, standardization and innovation creating valuing), (futuristic strategic management of health), (future market knowledge) and 17 components, 126 indicators were confirmed. The fit indices of the model were NFI=0.926, GOF=0.569 and SRMR=0.071, which indicates fit of the research model.

Conclusion: Managers by adopting strategies of increasing and sharing the flow of information and knowledge between specialist employees, project supervisors and other stakeholders in the supply chain - having a learning and forward-looking management style in selection, employment, training and how to behave with specialist employees in projects - adopting smart management style in business processes as market measurement, customer orientation, competition orientation, improving the quality of drug production and creating an atmosphere of win-win interaction with other knowledge-based enterprises and herbal pharmaceutical industries, can witness the effectiveness of human capital by gaining knowledge of the future market.

Keywords: Human capital, Innovation, Effectiveness, Knowledge-based

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Introduction

Herbal pharmaceutical knowledge-based enterprises play a vital role in the pharmaceutical industry due to the diverse plant ecosystem of Iran and the growing market of these products. In these companies, R & D operations have been formed to produce new medicines and have accede valuable achievements to introduce and produce herbal base medicines. One of the main challenges of knowledge-based companies is that they have a scientific structure but are weak in the team building and effective management of human capital available for innovation. A background study of research in the field of human capital innovation found that innovative human capital, which by its effectiveness gives competitive advantage in the business processes of these enterprises, and adopting forward-looking strategies to achieve it is one of the important challenges that little research on this problem is done and a serious gap is well felt in this field. The present study assesses the question of what is the effective innovative human capital model in herbal medicine knowledge-based companies? The main objective of the present project is to design and explain the effective innovative human capital model and test the model in Iranian herbal medicine knowledge-based companies.

Research Method

The research approach is mixed and qualitative-quantitative. The qualitative strategy used by Strauss and Corbin's grounded theory and the quantitative strategy used are structural equation modeling. In the qualitative section, semi-structured interviews are used to investigate and design the innovative human capital model. In the quantitative section, the designed model is tested by the method of structural equation modeling by SmartPLS software.

The statistical population in the qualitative part is the experts of the herbal pharmaceutical health sector, which includes managers of knowledge-based units of herbal medicine under charge of pharmacy faculties of medical sciences universities of Iran, managers of major herbal pharmaceutical companies in the country, and former and current officials in charge of herbal medicine in the body of the Ministry of Health and treatment. Sampling in the qualitative part was conducted in a purposive manner and until theoretical saturation was reached in the number of 15 interviews.

The statistical population in the quantitative part was the managers and researchers of the knowledge-based units of herbal pharmacy covered by the faculties of pharmacy of the medical sciences universities in the country, which were about 300 researchers. Sampling in the quantitative part is simple random sampling. 169 valid questionnaires were collected.

Findings

In the qualitative part, open coding (concepts), axial coding (categorization), selective coding (making connections between categories) were used to analyze the data of the interviews, and innovative human capital was considered as the core category. Finally, a paradigmatic model with six main dimensions, causal conditions (market-oriented dominance), core category (innovative human capital), contextual factors (herbal therapy cultural environment), intervention factors (weakness of policy making, standardization and innovation creating valuing), strategies (futuristic strategic management of health), consequences (future market knowledge), 17 components and 126 indicators were obtained(Figure 1).

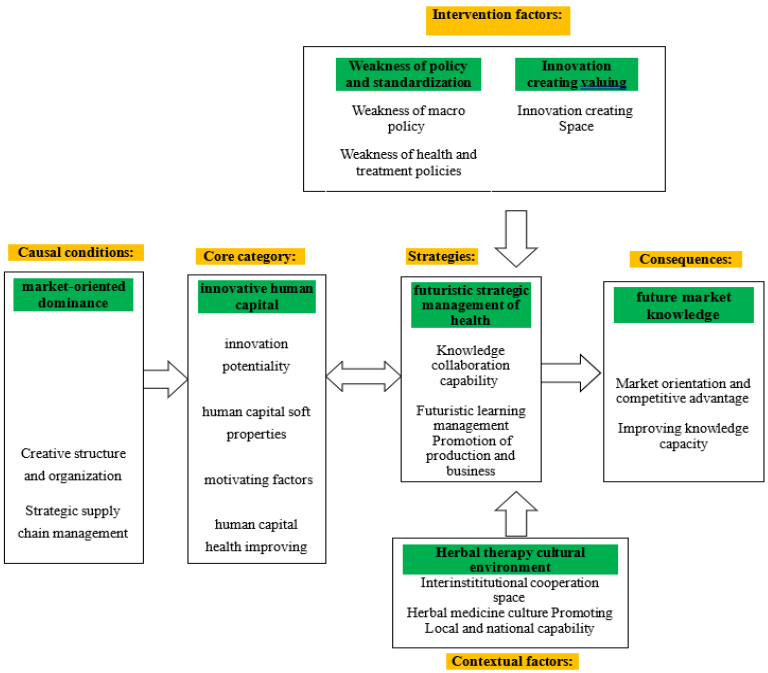

Figure 1. Effective innovative human capital model of knowledge-based herbal pharmaceutical companies

In the quantitative part to test the model, the results of SmartPLS software showed the fit of measurements models, structural model and default model. The factor loads of measurement models are higher than 0.3 and their t-statistics are higher than 1.96 and are significant. As a result, it can be said that all the questions explain the components of the research and are fully correlated with their dimensions. The structural equation model of the research was tested and the significance of the relationship between the constructs of the model was confirmed at the 95% confidence level (figure 2).

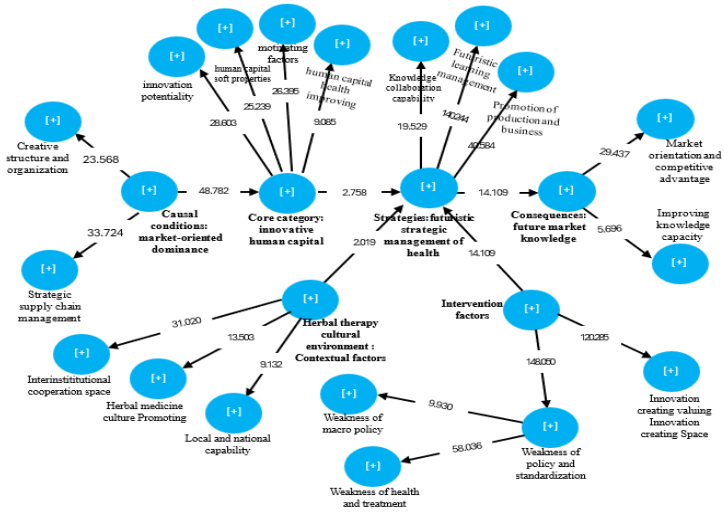

Figure 2. The structural model of innovative human capital in the case of significant coefficients

Also, the fit of the default model of the research was verified and the value of the fit indices of the default model shows the compromise between the quality of the structural model and the measurement models (Table 1). Therefore, the qualitative model of innovative human capital is also confirmed based on quantitative findings. Based on this, all the identified six dimensions have a role in the paradigm model of the effective innovative human capital model of knowledge-based herbal pharmaceutical companies, and the relationships between them are confirmed based on the paradigm model of Strauss and Corbin.

Table 1. The fitting results of the default model of innovative human capital

Model fit indices	Estimate value	Valid Data Limit
NFI	۰,۹۲۶	More than 0.8
GOF	۰,۵۶۹	More than 0.4
SRMR	۰,۰۷۱	Less than 0.1

Conclusions

In the qualitative part, the theoretical model of effective innovative human capital of knowledge-based herbal pharmaceutical companies was extracted in the form of 6 main dimensions, 17 sub-dimensions and 126 indicators. In the quantitative part, the model fit was verified in measurements, structural and the default model.

In form of causal factors compared to the research of Shabani-nejad et al. (2016), shows the importance of pursuing a creative structure and organization by managers

of knowledge-based companies. Also, to the supply chain management, has reflected the uncertainty factors such sanction conditions and adaptation in global changes. Compared to Aminullah's et al. (2017) in the form of the core category is using and developing a systematic human capital self-learning program. In the strategy of the model, adding to Garatini et al. (2021) and Akel et al. (2022), knowledge cooperating with the beneficiary community, the follow-up and timely implementation of the amendments of Iranian Food and Drug administration, academic centers to achieving the principles of good manufacturing practices in order to increase the quality, ensure the efficacy of the medicinal product, reduce waste and prevent the possible risks of manufactured drugs.

Compared to Gunjan et al. (2015) and Wells et al. (2019), attention is paid to various local and more comprehensive factors. The distinguishing feature of research with the research of Octavia et al. (2020) is that focusing on innovation with high technology, speed of innovation and with high value added innovation in Iranian companies, which have a great impact on the success of implementation the strategy of futuristic management of health and the consequences of the future market knowledge of these companies.

The dominant components of these companies is innovative human capital, both in the form of managers and experts which are directly related to the two dimensions of the core category and strategies. Therefore, strengthening the indicators of them will have a significant effect on improving future market knowledge.

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