

Factors Influencing Employability and Management Countermeasures of Nursing Graduates in Vocational Education in Henan Province, China

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Abstract:

The purpose of this study is to determine the factors that affect the employability of nursing graduates from higher vocational colleges in Henan Province, and to verify the relationship between these influencing factors and the quality of employment. In this study, 1500 questionnaires were randomly distributed, and the collected data were analyzed and researched. The reliability and validity of the questionnaires were verified. Their Cronbach's alpha value is between 0.887-0.977. Data analysis uses methods such as frequency analysis, descriptive statistical analysis, percentage, average, and exploratory factor analysis. The analysis results show that the KMO value of the sampling suitability test is 0.982, indicating that the variables are very suitable for factor analysis. The data passed the Bartlett sphericity test $p < 0.05$, and the approximate chi-square value was 83788.418. An exploratory factor analysis was carried out by using the methodology for the exploratory factor analysis with principal component analysis (PCA) and the orthogonal rotation with varimax rotation method. The results show that there are 5 components with eigenvalues greater than 1, the eigenvalues of all elements range from 1.082 to 26.278, and the cumulative variance is 81.621%.

Keywords: higher vocational education graduates, nursing major, employability, exploratory factor analysis (EFA)

1. INTRODUCTION

With the development of society and economy and the progress of science and technology, China's higher vocational education has developed rapidly. Higher vocational education has gradually taken up an increasing proportion of China's higher education. However, the employment problem of higher vocational education graduates, especially the employability problem gradually became the focus of social attention. Henan Province is the province with the largest educational population in China, with 53,600 schools of all levels and types, and an educated population of 28.1706 million, accounting for 9.49% of the country's total. Henan Province is a large human resources province. At the end of 2019, the total population of the province was 109.52 million, and the gross enrollment rate of higher education was 45.6%. Higher vocational education in Henan Province started in the 1980s. In 1998, with the integration of higher education enrollment and employment in China, higher vocational education in Henan

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Province has entered a period of rapid development. By 2020, there will be 74 higher vocational colleges in Henan Province. Among them, there are 18 public higher vocational education colleges offering nursing majors. Although considerable progress has been made in terms of quantity, due to the relatively weak economic foundation of Henan Province and the late start of higher vocational education, there is still a large gap between it and the regions with developed educational resources. Vigorously developing vocational education and improving the quality of workers play a vital role in promoting the economic rise of the Central Plains. At present, Henan Province is paying more and more attention to the training of nursing talents in higher vocational education with the basic characteristics of "professional and practical". However, to fully meet the needs of practical professional nursing personnel at all levels of the society, the "export" issue of employment also needs to be resolved with the issue of "import", which is solving the problem of talent training.

Although the market's strong demand for nursing professionals has provided a broad employment space for nursing graduates of higher vocational education, the increasingly obvious employability problem has also brought troubles to the employment problems of nursing graduates of higher vocational education. To promote the all-round development of nursing in Henan, in addition to focusing on the training and delivery of clinical nursing professionals in traditional hospitals, it is also necessary to solve the problem of the shortage of nursing talents in grassroots units such as communities, rehabilitation centers, elderly care institutions, and township hospitals. The employment problem of nursing graduates of higher vocational education is characterized by relatively high employment rate but low employment quality. Employment problems will also affect the future development of China's nursing industry. It has received increasing attention from all walks of life. Therefore, research on it has important theoretical value and practical significance.

2. RESEARCH OBJECTIVE

The purpose of this study is to determine the factors that affect the employability of nursing graduates in higher vocational colleges in Henan Province, and to verify the relationship between these influencing factors and the quality of employment.

3. LITERATURE REVIEW

The concept of higher vocational and technical education: In the early 1980s, my country introduced the concept of "higher vocational and technical education" in the field of education. Gu Mingyuan (1991) "Chinese Dictionary of Education" expressed it like this: "Higher vocational and technical education". It belongs to the third level of vocational and technical education in education. It includes vocational and technical education before employment and related re-education after employment. Yang Zhaosheng (2001) believes that higher vocational education nursing education is based on the cultural foundation of high school or the equivalent of high school, and belongs to "post-high school education". It has the basic attributes of higher education and is nursing education of talents based on general education.

The concept of employability: Peng Wei and Wang Xudong (2000) defined employment in "Introduction to Employment" as a form of the combination of labor and means of production, which means that individuals who have reached the legal working age and have the ability to work the process of carrying out legal labor in social work positions and obtaining corresponding remuneration or income from it. Lu Jiao (2003) discussed the concept of employment from both macro and micro perspectives. From a macro perspective, employment refers to the allocation and utilization of labor resources, which are inseparable from economic development and they promote each other. From a micro perspective, employment refers to the labor's own behavior, which depends on the labor's own labor skills, career choice awareness, and employment concepts. It is the prerequisite for the labor's own survival and development, and has an important impact on other social activities of the labor. In the late 1980s, some scholars in the United States revised the concept of employability. They believed that employability is a dynamic process of obtaining initial employment, maintaining employment, re-selecting, and acquiring new positions. While emphasizing the employability of employees, incorporating macro aspects such as the job market and national economic policies, it explains the overall concept of employability more comprehensively. In 2005, the American Education and Employment Commission once again clarified the concept of employability. Employability, or "employability", refers to the ability to obtain and maintain a job. Employability includes not only the ability to find a job in a narrow sense, but also the ability to continue to complete work and achieve good career development.

Regarding employment status and prospects: A study on the employment status and prospects of nursing

graduates in higher vocational education, Hu Wenfei (2009) in his article "Reflections on Employment in Higher Vocational Education and Higher Vocational Nursing Professionals" believes that: current doctors in nation country. The ratio with nursing staff is still at a relatively low level. Nursing professionals are in short supply in the country. The huge market demand is the reason for the high employment rate of nursing professionals. Wang Qingling, Dai Hongying, Wu Xiangqian, etc. (2011) pointed out in the "Survey on the Current Situation and Demand of Nursing Industry Talent Structure": The demand for nursing professions in economically developed areas has begun to level off in 2010, and many large hospitals have only started to respond. Nursing graduates with a bachelor's degree or above are included in the establishment. The demand for nursing professionals is declining, prompting nursing graduates to face severe challenges.

Regarding employment problems: Li Xuejun and Ma Zhanshan (2012) "Employment Survey and Analysis of Nursing Higher Vocational Education" pointed out: Most nursing students still do not understand the status quo of our country, fail to clearly analyze the current layout of nursing staff, ignoring elderly nursing and community nursing. Let alone there is a broad job market in nursing and foreign-related nursing work in foreign countries. In particular, our society has entered an aging society. Most students still choose traditional clinical nursing positions when choosing jobs. Nursing care institutions are being established in various regions, but some students are actively willing to go to these institutions for employment.

Regarding countermeasures: Zhang Ya (2008) "Research on Employment of Higher Vocational Education Graduates" believes that: in view of the current situation of employment difficulties, it is necessary to strengthen the employment guidance and entrepreneurship education of higher vocational education graduates; the state promulgated supporting policies; strengthening social acceptance; improving the methods of running higher vocational education institutions; enhancing the social adaptability of higher vocational education students. Regarding foreign experience in increasing the employment rate of nursing professions, Tao Hongbing, Fang Pengqian, Chen Maosheng, etc. (2006) pointed out: Some developed countries provide different nursing professions according to their own nursing development needs. In addition to traditional nursing work in hospitals, they also vigorously support the development of nursing staff in community and community nursing, rehabilitation centers, educational institutions and other aspects.

4. METHODOLOGY

This study aims to analyze the factors that affect the employment of nursing graduates in higher vocational colleges in Henan Province, and verify the relationship between these influencing factors and the quality of employment. This study uses quantitative research methods.

4.1. Selection of survey area and research object:

The tool of this study is a closed questionnaire. Five public higher vocational colleges in Zhengzhou, Kaifeng, Sanmenxia, Anyang, and Zhoukou, which are representative of Henan Province, were randomly selected, and their nursing care for the five years from 2016 to 2020 professional graduates are used as research objects.

Reliability measurement uses two methods: internal consistency reliability and retest reliability. The internal consistency reliability is evaluated by Cronbach's alpha, which is used to measure the degree of consistency and reliability between the various questions of the questionnaire. According to Nunnally (1978), to confirm that the reliability measures can be reliable, the Cronbach's alpha value have to reach a recommended level of 0.70. According to the sampling results, the Cronbach's α value of all variables is between 0.876 and 0.970, which is higher than 0.70. Therefore, this means that they are reliable.

The design of this questionnaire all adopts single-choice questions, mainly using Likert's five-level scale answer mode. All questions on the scale are positive scores, and the score range is 5-1 as the basis for statistical analysis. The representative range of the score is: 5=very important, 4=more important, 3=fair, 2=not very important, 1=not important.

4.2. Data collection:

Firstly, this study randomly distributed 1,500 questionnaires to the respondents. Before the questionnaire was formally issued, a pilot test was conducted on 50 interviewed students from Zhoukou Vocational and Technical College to test the effectiveness and consistency of the questionnaire. After getting feedback from the pilot test, the question items were adjusted again, and finally questionnaires were issued to 5 nursing graduates from higher vocational colleges in Henan Province, and all the returned questionnaires were complete. Secondly, in order to

complete this research, secondary data such as books, textbooks, papers, independent research and academic papers are obtained from research documents related to the employment quality of domestic and foreign graduates, and from databases such as CNKI. The researcher accurately grasps the latest research trends, finds the breakthrough points of this research, and provides theoretical and practical basis for this research question.

4.3. Data analysis:

After collecting and sorting out the data, the researchers use statistics in the social sciences to check, filter and code the entire data for further research. The first measurement of Cronbach’s alpha value is between 0.887-0.977, which shows that the reliability and quality of this data is good, and the research data is true and reliable. Data analysis uses descriptive statistical analysis, percentage, average, frequency analysis, and factor analysis. The exploratory factor analysis (EFA) method was used to group the initial items in the data analysis, and the variables with high correlation were prepared together. It mainly carries out exploratory factor analysis on the detailed answers of observable variables by extracting principal components. The dimensions with different number of components were fitted and compared, and the rotation factor load is clearly explained.

5. RESULTS

The demographic information of the respondents: according to the results of this questionnaire, the demographic information of the respondents found that most of the respondents in nursing majors are girls (86.47%), and the graduation date is mainly in 2020 (87.54%), The place of employment is mainly county or county-level city (40.05%), and the average monthly income is more than RMB 4000 (34.36%).

In determining the analysis results of the research variables, the Bartlett’s spherical test was used to test the overall significance of the correlation between the variables ($p < 0.05$), and the Kaiser-Meyer-Olkin was used to examine the relationship between 39 factor variables, using the factor analysis to conduct information enrichment research. First, analyze whether the research data is suitable for factor analysis. The research results show that: approximate chi-square = 83788.418, KMO is 0.982, greater than 0.6, which meets the prerequisite requirements of factor analysis, which means that variables can be used for factor analysis research (Hair et al., 2010). In addition, the data was passed the Bartlett sphericity test ($p < 0.05$), indicating that the research data is suitable for factor analysis. In order to confirm the practical significance of the variable classification, the factor load must be greater than 0.60 (Hair et al., 2010). Following this standard, 13 variables were deleted, only 26 variables remain.

Table 1. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	26.278	67.38	67.38	26.278	67.38	67.38	10.119	25.947	25.947
2	1.919	4.921	72.301	1.919	4.921	72.301	6.737	17.273	43.22
3	1.637	4.199	76.499	1.637	4.199	76.499	6.57	16.847	60.067
4	1.216	3.118	79.617	1.216	3.118	79.617	4.789	12.279	72.345
5	1.082	2.005	81.621	1.082	2.005	81.621	3.618	9.276	81.621
6	0.616	1.579	83.201	-	-	-	-	-	-

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39	0.047	0.12	100

From table 1 shown that use principal component analysis (PCA) and varimax orthogonal rotation technique to analyze the variables. The results show that there are 5 components with eigenvalues greater than 1, the eigenvalues of all elements range from 1.082 to 26.278, and the cumulative variance is 81.621%. There are Eigenvalues of 26.278, 1.919, 1.637, 1.216, and 1.082. So, the result cannot be rejected, the factor extraction is five elements and it accounts for 25.947%, 43.22%, 60.067%, 72.345%, and 81.621% of the variances. Significantly, all the factors analysis found that the element 1 (F1), social security factor is composed of 13 variables, and the factor load is between 0.658-0.784, and the variance explains 25.947% in the data. The element 2 (F2), own quality factor is composed of 5 variables, and the factor load is between 0.643-0.766, and the variance explains 17.273% in the data. The element 3 (F3), graduate school factor is composed of 2 variables, and the factor load is between 0.669-0.682, and the variance explains 16.847% in the data. The element 4 (F4), basic requirements factor is composed of 4 variables, and the factor load is between 0.689-0.764, and the variance explains 12.279% in the data. The element 5 (F5), special requirements factor is composed of 2 variables, and the factor load is between 0.66-0.716, and the variance explains 9.276% in the data.

6. DISCUSSION AND CONCLUSION

Graduates of higher vocational colleges are important human resources of the society. Guaranteeing their employment quality is not only related to social stability and economic development, but also the basis for the sustained and healthy development of higher vocational education. Scholars such as Deng Lihuan (2014) believe that to effectively improve the employment quality of vocational college graduates requires the joint efforts of individual students, graduate schools, employers, and the government.

Based on the analysis and demonstration of the research results, the author explored the factors affecting the employability of nursing graduates of higher vocational education in Henan Province and the factors of graduate expectations. Through exploratory factor analysis, it is found that there are the following five elements: (i) social security; (ii) own quality; (iii) graduate school; (iv) basic requirements; (v) special requirements. The element information is as follows:

(i) Social security: It refers to the need to work together from the government, medical units, social institutions and other aspects to increase policy implementation, introduce more preferential policies, strengthen the self-construction of primary medical units, eliminate public opinion pressure, and effectively solve the salary income and benefits that graduate are concerned about. The traditional employment concept of graduates is changed through policy guidelines, grassroots post publicity and employment guidance, so as to rationally guide and encourage vocational nursing graduates to find employment at grassroots levels. According to Gu Zhenyan (2010), the unsatisfactory social environment has led to the low employment rate of higher vocational colleges, and the government should relax the investment regulations of foreign-funded enterprises and private enterprises to create more employment opportunities. On the word of Yin Hui (2012), the analysis of the employment rate of higher vocational colleges, the employment philosophy, professional quality and technical ability of enterprise units are the main factors leading to the low employment rate of higher vocational graduates. Besides, Wang Xianwei (2013) explored the reasons that affect the employment of students in higher vocational colleges from both external and internal reasons. The external reasons include the influence of social economy and national policies.

(ii) Own quality: Nursing graduates of higher vocational colleges will be favored by employers only if they have a good level of their own. With the development of the times, most employers are more and more interested in the value of the students themselves, and the educational level requirements are also increasing. The higher the level, the more often graduates are eliminated because they cannot meet the high requirements of employers. It is no exaggeration to say that the decisive factor for the successful employment of graduates is also the comprehensive quality of the students themselves. Regarding the overall personal quality, the empirical survey conducted by Lining Liu (2002) shows that if one's own quality is excellent, employers are happy to accept it even if they do not have a good social relationship. Additionally, Fu Yongchang (2005) believes that with the development of society and economy, employers will have higher and higher requirements for graduates' own quality and academic level, and the focus on talent needs has shifted. Whether it can meet the quality requirements of employers has become the

decisive factor for the successful employment of graduates. Moreover, Huang Jingbao (2008) directly put forward the hypothesis of undergraduate employability through theoretical research and a typical survey of a certain university in Beijing. He believes that the current serious employment problem of undergraduates in my country is mainly due to the lack of employability of undergraduates. Furthermore, Tang Guoying (2016) believes that my country's new economic normal of "slow growth, structural adjustment, and transfer of growth points" has brought challenges and difficulties to vocational college graduates. College students in vocational colleges must improve their ability to adapt to the society. Improve their own vocational skills, so as to achieve the purpose of increasing the employment rate of vocational college students and improving the quality of employment.

(iii) Graduated school: It refers to the high degree of conformity between the training of talents in universities and the needs of the market. It will directly affect the matching degree of talents cultivated by universities and the current talent demand structure of economic and social development, which will restrict the healthy development of the economy and society, and affect college students' quality of employment. In the "Multi-angle Analysis of University Student' Employability and Countermeasures", Du Yi analyzed the college students' job-hunting expectations and the needs of employers, and analyzed the disconnection between the university's talent training plan and social needs, and further analyzed the current employability of college students. There is a gap between it and social needs. He believes that schools need to change the existing education and training model and better integrate with social needs." By Ding Jinchang (2010) put forward the countermeasures and suggestions to improve the employment quality of graduates of higher vocational colleges in terms of talent training model, employment service system, and student entrepreneurship education from the perspective of school teaching reform. In addition, Zhao Hui (2014) believes that the professional setting of higher vocational colleges is the logical starting point for teaching work in higher vocational colleges, and the professional setting has an important impact on the employment quality of graduates in higher vocational colleges, and the professional setting of higher vocational colleges should be employment-oriented by making settings and adjustments.

(iv) Basic requirements which refer to the basic pre-set standards of nursing graduates for their own employment-related indexes, which are mainly reflected in employment salary, benefits, training opportunities and working environment. According to Meng Zhigang (2017), for higher vocational graduates, the demand for employment must be based on the actual situation. Education resources should be integrated to enhance their competitiveness in the market, and they should be forward-looking, which is the positioning of oneself, a calm analysis of one's own abilities, and an objective evaluation standard for oneself. In terms of salary and benefits, vocational graduates must not only see high-paying positions, but also take into account long-term self-improvement demands.

(v) Special expectations. It refers to graduates who not only pay attention to basic salary, benefits, training opportunities and working environment, but also put forward higher requirements for the city where the job is located and whether it is suitable for their hobbies. According to Gao Hongyan (2003), vocational graduates generally hope to work in large cities, large institutions, large companies, universities and other units, and hope that the units they obtain have a good reputation, high efficiency, and comfortable living conditions. However, these employment expectations are significantly different from the actual employment situation. It can be seen that there are many factors that affect the employment quality of graduates in higher vocational colleges, which can be mainly divided into social factors, personal factors and school factors. These are the basic factors that affect the employment of graduates. Only with the joint efforts of the government, employers, individuals, family and school can the employment quality of graduates of higher vocational colleges be effectively improved and the basic demands and special expectations of graduates be met.

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References:

- [1]. Deng Lihuan (2014) strengthened employment guidance education and reasonably guided college students to start their own businesses.[J]. Guangdong Vocational and technical education and research, (1): 86

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- [2]. Ding Jinchang.(2011).Thinking and Practice on improving the employment quality of higher vocational college graduates [J]. China higher education research, (10): 71-72
- [3]. Fu Yongchang (2005) analysis of factors influencing college students' employment and Research on countermeasures [J]. Heilongjiang Higher Education Research (8): 129-132
- [4]. Gao Hongyan.(2003).Analysis and Countermeasures of employment situation of higher vocational graduates [J]. Journal of Nanjing Institute of technology, (6): 71-73.
- [5]. Gu Mingyuan, etc. (1991). Education Dictionary (3 volumes) [K]. Shanghai: Shanghai Education Press, 227.
- [6]. Gu Zhenyan (2010) research on employment of higher vocational college graduates in Anhui Province [D]. Master Thesis of Anhui University.
- [7]. Hair, J., Bush, R., & Ortinau, D. (2010). Marketing Research: Within a Changing Information Environment. Cape town: Juta and Company LTD.
- [8]. Hu Wenfei. (2009).Thoughts on the employment situation of nursing majors in higher vocational colleges[J]. Hubei: Journal of Hubei Adult Education Institute, (3): 30-31.
- [9]. Huang Jingbao. (2008). Influencing factors of College Students' employment opportunities [J]. Economic guide, (10): 18
- [10]. Li Xuejun, Ma Zhanshan. (2012).Investigation and Analysis of Employment in Nursing Vocational Professionals[J]. Heilongjiang: Journal of Jiamusi Education College, (9): 208-209.
- [11]. Liu lining (2002) thinking about the factors affecting the employment of college graduates [J]. Journal of Pingdingshan teachers college(6):85-87
- [12]. Lu Jiao. (2003).Research on my country's Youth Unemployment Problem and Countermeasures in the Global Context[C]. Master's Degree Thesis of East China Normal University, 22.
- [13]. Meng Zhigang (2017) research on the influencing factors of Higher Vocational Graduates' employment [D]. Master's thesis of Fujian Normal University.
- [14]. Nunnally, J. C. (1978). Psychometric Theory. New York: McGraw-Hill.
- [15]. Peng Wei, Wang Xudong. (2000). Introduction to Employment[M]. Beijing: Economic Management Press, 2.
- [16]. Tang Guoying. (2016). Thoughts on improving the employability of Higher Vocational College Students under the new normal [J]. Journal of Southwest Jiaotong University, (1): 36-40
- [17]. Tao Hongbing, Fang Pengqian, Chen Maosheng, etc. (2006).Talking about the development of the nursing profession in my country from the professional post setting of foreign nursing staff[J]. Wuhan: Journal of Nursing , (14): 19-21.
- [18]. Wang Qingling, Dai Hongying, Wu Xiangqian, etc. (2011).Investigation on the status quo and demand situation of the talent structure in the nursing industry[J]. Shanghai: Shanghai Nursing, (5): 35-38.
- [19]. Wang Xianwei (2013) research on the influencing factors of Higher Vocational Students' employment [J]. Journal of Jincheng Polytechnic. Research on Higher Vocational Education (28): 16-18
- [20]. Yang Zhaosheng. (2001).Actively develop higher vocational nursing education [J]. Shanghai: Chinese International Nursing Journal, (1).
- [21]. Yin Hui. (2012). Research on the employment impact of Higher Vocational College Students Based on multiple regression method [D]. Master's thesis of Central South University, (05)
- [22]. Zhao Hui.(2014). Construction of employment oriented early warning system model for specialty setting in Higher Vocational Education [J]. Research on education development, (23): 43-46
- [23]. Zhang Ya. (2008). Research on employment of higher vocational graduates [D]. Master's thesis of Xi'an University of architecture and technology.