

Influence Factors of Employers' Satisfaction of Logistics Management Graduates

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ABSTRACT

Accurately grasping the degree of satisfaction and expectation of employers for logistics management graduates, finding out the influencing factors, and looking for the improvement countermeasures will help to guide the training of logistics management undergraduates in colleges scientifically and enhance their employment competitiveness. This study finds out 25 factors influencing employers' satisfaction degree of logistics management graduates through the combination of literature research and field research, and divides them into five dimensions: school image, employer expectation, employer perceived quality, employer perceived value and employer satisfaction. The results show that, school image, employer expectation, employer perceived quality and employer perceived value have direct or indirect positive effects on employer satisfaction. Among them, employer perceived quality has the highest overall impact on employer satisfaction, while employer perceived value has the greatest direct impact on employer satisfaction.

Keywords: Employer satisfaction, Influencing factors, Structural equation model, Logistics management major.

1. INTRODUCTION

With the vigorous development of logistics industry, the market demand for logistics talents is increasing. At the same time, to meet the social demand for logistics talents, many colleges and universities are setting up logistics management majors in full swing. Can the logistics management graduates trained by colleges and universities meet the needs of social market? Accurately grasping the degree of satisfaction and expectation of employers for logistics management undergraduates, finding out the influencing factors, and looking for the improvement countermeasures will help to guide the training of logistics management undergraduates in colleges scientifically, enhance their employment competitiveness and improve employers' satisfaction. Therefore, the research on influencing factors of employers' satisfaction of logistics management graduates has important practical significance.

2. MODEL CONSTRUCTION AND RESEARCH ASSUMPTIONS

2.1 Model Variables

This study sets up five latent variables, which are school image, employer expectation, employer perceived quality, employer perceived value and employer satisfaction, of which employer satisfaction is the dependent variable. Based on referring to research literature and consulting to experts and scholars in the industry, this paper constructs the following index system, as shown in "Table 1".

Table 1. Model variables

Latent variable	Indicator name	Observation variable
School image	Overall school quality	S1 School popularity
		S2 School's social reputation
		S3 Employment guidance and services
	School teaching quality	S4 Curriculum
		S5 Teaching staff
	School hardware and software facilities	S6 Logistics hardware equipment
		S7 Logistics software equipment
Employer expectation	Expectations of scientific and cultural literacy	W1 Theoretical knowledge expectations
		W2 Professional skills expectations
	Expectations of Ideological and moral cultivation	W3 Responsible expectations
		W4 Unity and cooperation expectations
	The expectation of job competency	W5 Practical operation ability expectations
		W6 Developmental expectations
Employer perceived quality	Perception of scientific and cultural literacy	Q1 Perception of theoretical knowledge
		Q2 Perception of professional skills
	Perception of ideological and moral cultivation	Q3 Sense of responsibility
		Q4 Perception of unity and cooperation
	Perception of job competency	Q5 Perception of basic practical operation ability
		Q6 Employee developability
Employer perceived value	Ratio of ability to salary	V1 Ratio of ability to salary
	Ratio of salary to ability	V2 Ratio of salary to ability
	Overall perceived value	V3 Total perceived value
Employer satisfaction	Expected satisfaction	SA1 Gap with expected satisfaction
	Ideal satisfaction	SA2 Gap with ideal satisfaction
	Overall satisfaction	SA3 Overall satisfaction

2.2 Model Construction

Based on the improving and revising model of Chinese customer satisfaction, by introducing latent variables such as school image, employer

expectation, employer perceived quality, employer perceived value and employer satisfaction, a conceptual model of employers' satisfaction of logistics management graduates is proposed, as shown in "Figure 1".

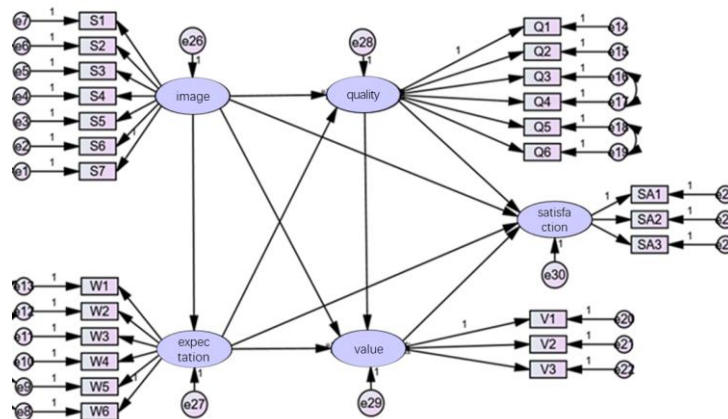


Figure 1 Conceptual model.

In this conceptual model, the degree of employer satisfaction is affected by many factors at

the same time. Meanwhile, there is a certain correlation among the four latent variables of

employer expectation, employer perceived quality, employer perceived value and employer satisfaction. The conceptual model clearly describes the influence mechanism and path of employer satisfaction.

2.3 Research Assumptions

Mahsood Shah (2015) surveyed 400 employers of university graduates in Australia and pointed out that the key abilities of university graduates should meet the changing needs of the market for vocational skills [1]. Hoan Nguyen et al. (2020) measured the factors affecting employer satisfaction with accounting graduates in Hanoi, Vietnam, and identified three main determinants, including students' experience before graduation, University reputation, and university recruitment support policies [2]. Tandon Urvashi et al. (2021) investigated the emotional maturity of fresh graduates majoring in engineering information technology and its relationship with employer satisfaction. The research results show that there is a significant positive correlation between emotional maturity and employer satisfaction [3].

Han Wei and Xie Meng (2011) used interviews and questionnaires to investigate employers' satisfaction of college graduates [4]. Tingting Zhao and Wang Tong (2014) investigated the employer satisfaction of graduates' training quality from four dimensions: relevant professional knowledge level, relevant engineering ability, relevant professional development ability and moral level with the help of ACSI model [5]. Lv Bu and Zhaowu Dong (2014) pointed out that the actual working ability was the most important factor affecting the satisfaction of employers used the research method of regression analysis [6]. Yuhuan Liu (2019) analyzed the salary level, professional relevance, employment satisfaction, the coincidence of career expectations, and other indicators of graduates of Hainan University from 2016 to 2018, and discussed the path to improve the employment quality of graduates of Hainan University [7].

Based on the above literature research, this paper puts forward the relevant research hypotheses as follows:

- Hypothesis H1: There is a positive correlation between school image and employer satisfaction.
- Hypothesis H2: There is a positive correlation between school image and employer expectation.

- Hypothesis H3: There is a positive correlation between school image and the employer perceived quality.
- Hypothesis H4: There is a positive correlation between school image and employer perceived value.
- Hypothesis H5: There is a positive correlation between "employer" expectation and employer satisfaction.
- Hypothesis H6: There is a positive correlation between employer expectation and employer perceived quality.
- Hypothesis H7: There is a positive correlation between employer expectation and employer perceived value.
- Hypothesis H8: There is a positive correlation between employer perceived quality and employer satisfaction.
- Hypothesis H9: There is a positive correlation between employer perceived quality and employer perceived value.
- Hypothesis H10: There is a positive correlation between employer perceived value and employer satisfaction.

3. DATA ANALYSIS

3.1 Data Sources

According to "Table 1", a questionnaire containing 25 questions is designed. The questionnaire options use 5-point Likert scale method to express the influence degree of each factor, in which 1-5 respectively represent "very dissatisfied", "relatively dissatisfied", "average", "relatively satisfied" and "very satisfied".

The questionnaire was distributed to the relevant managers of logistics department and human resource department of enterprises and institutions. The questionnaires were distributed in two ways: paper questionnaires and online questionnaires. A total of 296 questionnaires were distributed and 261 valid questionnaires were recovered, with an effective recovery rate of 88.18%. The sample of the questionnaire is shown in "Table 2".

Table 2. Samples of questionnaire survey

Category		Number of samples	Proportion (%)
Working years	1-2 years	63	24.14%
	3-5 years	62	23.75%
	6-10 years	72	27.59%
	More than 10 years	64	24.52%
Unit nature	State-owned enterprise	68	26.05%
	Private enterprise	54	20.69%
	Foreign-funded enterprises	78	29.89%
	Others	61	23.37%
Post	Junior managers of Logistics Department	74	28.35%
	Middle and senior managers of Logistics Department	37	14.18%
	Junior managers of HR department	49	18.77%
	Middle and senior managers of HR department	38	14.56%
	Others	63	24.14%

3.2 Reliability Analysis

Reliability analysis can test the reliability of the questionnaire survey results. This study mainly uses the Cronbach coefficient to analyse the reliability of the questionnaire. It is generally believed that if the Cronbach coefficient is greater than 0.7, indicating that the reliability of questionnaire is high. The reliability of the questionnaire results is analysed by SPSS 24.0 software. The results are shown in "Table 3".

Table 3. Reliability test results

Cronbach α value	Number of items
0.919	25

In "Table 3", the overall Cronbach coefficient of the 25 observation variables is 0.919, far greater than 0.7, indicating that the questionnaire is

reasonably designed, there is a good consistency between the various latent variables, and there is a significant correlation between the variables and the observed variables.

3.3 Validity Analysis

Validity analysis can test the validity of the questionnaire survey results, that is, the consistency between the measurement results and the research purpose. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett Test of Sphericity are usually used to analyse the validity of the questionnaire. It is generally believed that the validity of the questionnaire is higher when the KMO value is greater than 0.5 and the significance of Bartlett Test of Sphericity is less than 0.05. The validity of the questionnaire results is analysed by SPSS 24.0 software. The results are shown in "Table 4".

Table 4. KMO and Bartlett test results

KMO sampling suitability quantity		.894
Bartlett Test of Sphericity	Approximate chi-square	4634.403
	Freedom	300
	Significance	.000

According to the validity test of the questionnaire, the KMO value is 0.894 and the significance level of Bartlett Test of Sphericity is 0.000, indicating that the data obtained from the questionnaire have good validity and can be used for factor analysis.

4. MODEL TEST AND ANALYSIS

4.1 Initial Model Test

The fitting effect of employer satisfaction model of logistics management graduates and data obtained from questionnaire survey is tested by AMOS 22.0 software. The path coefficient in the

model reflects the closeness of relationship between latent variables. The larger the path coefficient is, the closer the relationship between two latent

variables is, and the greater the influence is. The data results are shown in "Table 5".

Table 5. Fitting index of initial model

Path		Estimate	S.E.	C.R.	P
Employer expectation	← School image	.501	.087	5.726	***
Employer perceived quality	← School image	.280	.108	2.604	.009
Employer perceived quality	← Employer expectation	.366	.101	3.617	***
Employer perceived value	← Employer expectation	.054	.070	.766	.444
Employer perceived value	← Employer perceived quality	.154	.049	3.148	.002
Employer perceived value	← School image	.417	.084	4.952	***
Employer satisfaction	← Employer perceived quality	.217	.049	4.460	***
Employer satisfaction	← Employer perceived value	.366	.070	5.205	***

a Note: *** represents P<0.001

As shown in "Table 5", the C.R. value and P-value of the path "employer perceived value ← employer expectation" does not meet the requirements, and is not significant, indicating that there is no significant correlation between employer expectation and employer perceived value, so the model needs to be modified, this path should be deleted in principle. The p-value of the path

"employer perceived quality ← school image" and the path "employer perceived value ← employer perceived quality" is 0.009 and 0.002 respectively, keep them temporarily, and then observe whether the path is significant after the model is modified.

The results of fitting index of model and data are shown in "Table 6".

Table 6. Fitting index parameters of initial model

Fitting index	Ideal criteria	Model results	Accepted
CMIN/DF	≤3	2.377	Yes
CFI	≥0.9	0.951	Yes
NFI	≥0.9	0.868	No
TLI	≥0.9	0.908	Yes
IFI	≥0.9	0.919	Yes
RMSEA	≤ 0.08	0.057	Yes

As can be seen from "Table 6", the fitting degree of CMIN/DF (Relative chi-square), CFI (Comparative fitting index), TLI (Tucker-Lewis index) and IFI (Incremental fitting index) are acceptable, but the index of NFI (Normative fitting index) does not meet the criteria and requirements of the model. The fitting effect of the model is poor, so the model needs to be modified and retested.

4.2 Model Modification

By deleting the path of "employer perceived value ← employer expectation", the fitting results of the modified model are shown in "Table 7".

Table 7. Fitting index of modified model

Path			Estimate	S.E.	C.R.	P
employer expectation	←	school image	.451	.078	5.798	***
employer perceived quality	←	school image	.313	.102	3.071	.002
employer perceived quality	←	employer expectation	.365	.107	3.415	***
employer perceived value	←	school image	.402	.072	5.580	***
employer perceived value	←	Employer perceived quality	.163	.048	3.409	***
Employer satisfaction	←	employer perceived value	.356	.067	5.271	***
employer satisfaction	←	employer perceived quality	.211	.048	4.421	***

a Note: *** represents P<0.001

According to the results of modified model, the fitting effect of the model is good, and the p-value generally decreases. The p-value that is slightly larger is the direct impact of school image on employer perceived quality, but it still meets the

requirement that the p-value is less than 0.05. Therefore, according to the fitting results of the model, the path is valid.

The results of fitting index of modified model and data are shown in "Table 8".

Table 8. Fitting index parameters of modified model

Fitting index	Ideal criteria	Model Results	Accepted
CMIN/DF	≤3	1.844	Yes
CFI	>0.9	0.951	Yes
NFI	>0.9	0.900	Yes
TLI	>0.9	0.944	Yes
IFI	>0.9	0.952	Yes
RMSEA	< 0.08	0.057	Yes

As can be seen from "Table 8", NFI is 0.900, not exceeding the acceptable interval, and the ratio of CMIN to DF is 1.844, which indicate that the model has very satisfactory results. The fitting results show that the model is successfully modified, all the indexes pass the test, and the model fits well.

4.3 Test Results of Research Hypothesis

The modified model and standardized estimates of main effect path coefficients are shown in "Figure 2".

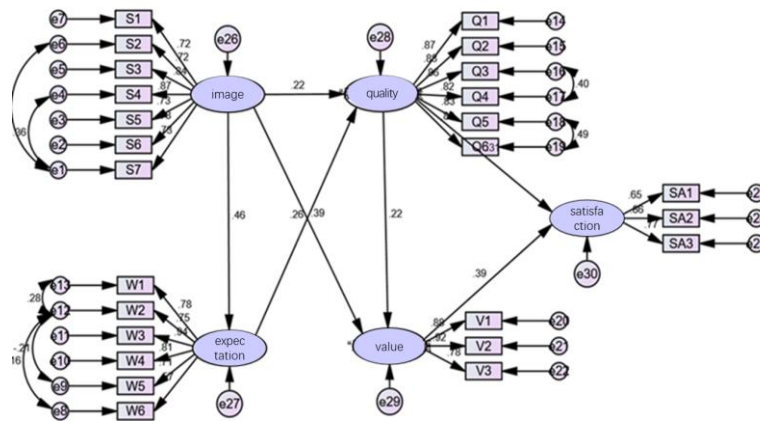


Figure 2 Modified conceptual model.

- Hypothesis 1: There is a positive correlation between school image and employer satisfaction. From the results of modified model, it seems that school image does not directly affect employer satisfaction, so this hypothesis was not supported.
- Hypothesis 2: There is a positive correlation between school image and employer expectation. From the results of modified model, the standardized path coefficient is 0.46, which is significant at 0.001 level, so this hypothesis is supported.
- Hypothesis 3: There is a positive correlation between school image and employers perceived quality. From the results of modified model, the standardized path coefficient is 0.22, which is significant at 0.001 level, so this hypothesis is supported.
- Hypothesis 4: There is a positive correlation between school image and employer perceived value. From the results of modified model, the standardized path coefficient is 0.39, which is significant at 0.001 level, so this hypothesis is supported.
- Hypothesis 5: There is a positive correlation between employer expectation and employer satisfaction. From the results of modified model, it seems that employer expectation does not directly affect employer satisfaction, so this hypothesis is not supported.
- Hypothesis 6: There is a positive correlation between employer expectation and employer perceived quality. From the results of modified model, the standardized path coefficient is 0.39, which is significant at 0.001 level, so this hypothesis is supported.
- Hypothesis 7: There is a positive correlation between employer expectation and employer perceived value. From the results of modified model, it seems that employer expectation does not directly affect employer perceived value, so this hypothesis is not supported.
- Hypothesis 8: There is a positive correlation between employer perceived quality and employer satisfaction. From the results of modified model, the standardized path coefficient is 0.31, which is significant at 0.001 level, so this hypothesis is supported.
- Hypothesis 9: There is a positive correlation between employer perceived quality and employer perceived value. From the results of modified model, the standardized path coefficient is 0.22, which is significant at 0.001 level, so this hypothesis is supported.
- Hypothesis 10: There is a positive correlation between employer perceived value and employer satisfaction. From the results of modified model, the standardized path coefficient is 0.39, which is significant at 0.001 level, so this hypothesis is supported.

The results of hypothesis test are shown in "Table 9".

Table 9. Summary of hypothesis test

Hypothesis	Content of hypothesis	Results
H1	There is a positive correlation between school image and employer satisfaction	Not supported
H2	There is a positive correlation between school image and employer expectation	Supported
H3	There is a positive correlation between school image and employers perceived quality	Supported
H4	There is a positive correlation between school image and employer perceived value	Supported
H5	There is a positive correlation between employer expectation and employer satisfaction	Not supported
H6	There is a positive correlation between employer expectation and employer perceived quality	Supported
H7	There is a positive correlation between employer expectation and employer perceived value	Not supported
H8	There is a positive correlation between employer perceived quality and employer satisfaction	Supported
H9	There is a positive correlation between employer perceived quality and employer perceived value	Supported
H10	There is a positive correlation between employer perceived value and employer satisfaction	Supported

4.4 Model Effect Analysis

According to the modified model ("Figure 2"), the direct effect, indirect effect and total effect of each latent variable on employer expectation,

Table 10. Influential effect of school image on employer expectation

S.no.	Variables	Direct effect	Indirect effect	Total effect
1	School image	0.46	0.00	0.46

As can be seen from "Table 10", school image is the only variable that affects employer expectation, with a direct effect of 0.46. This result indicates that, for every unit that school image improves, employer expectation will increase by

employer quality perception, employer perceived value and employer satisfaction can be obtained. The results are shown in "Table 10", "Table 11", "Table 12" and "Table 13".

0.46 units. This conclusion is in line with the real situation, where employers have higher psychological expectations for graduates from universities such as 985 or 211 compared to those from ordinary universities.

Table 11. Influential effect of other latent variables on employer perceived quality

S.no.	Variables	Direct effect	Indirect effect	Total effect
1	School image	0.22	0.18	0.40
2	Employer expectation	0.39	0.00	0.39

"Table 11" shows that there are two factors that affect employer perceived quality, namely school image and employer expectation. The total effect of school image and employer expectation on employer perceived quality is close and relatively large, which are 0.40 and 0.39 respectively. This shows that the influence of school image and employer expectation on employer perceived quality is quite important. In terms of influence

path, both school image and employer expectation have significant direct effect on employer perceived quality, and the direct effect of employer expectation is most significant, which is 0.39. In reality, employers' perceived quality for college graduates inevitably stems from the comparison between the actual performance of graduates and employers' expectations.

Table 12. Influential effect of other latent variables on employer perceived value

S.no.	Variables	Direct effect	Indirect effect	Total effect
1	School image	0.39	0.09	0.48
2	Employer expectation	0.00	0.09	0.09
3	Employer perceived quality	0.22	0.00	0.22

"Table 12" shows that three factors have an impact on employer perceived value, namely school image, employer expectation and employer perceived quality. Among them, school image has the greatest impact on employer perceived value, and the total effect is 0.48; the second is employer perceived quality, and the total effect is 0.22. In terms of the influence path, school image has a great direct effect on employer perceived value,

Table 13. Influential effect of other latent variables on employer satisfaction

S.no.	Variables	Direct effect	Indirect effect	Total effect
1	School image	0.00	0.31	0.31
2	Employer expectation	0.00	0.16	0.16
3	Employer perceived quality	0.31	0.09	0.40
4	Employer perceived value	0.39	0.00	0.39

"Table 13" shows that there are four factors, namely, school image, employer expectation, employer perceived quality and employer perceived value, all have a direct or indirect effect on employer satisfaction. Among them, employer perceived quality has the biggest impact on employer satisfaction, with a total effect of 0.40; the second is employer perceived value, with a total effect of 0.39, which has little different from employer perceived quality; the total effect of school image is the third, which is 0.31. Compared to the other three latent variables, the total effect of employer expectation is only 0.16. In terms of influence paths, both employer perceived quality and employer perceived value have significant direct effects on employer satisfaction, with the most significant effects of 0.31 and 0.39 respectively. Employer perceived quality not only has a direct positive impact on employer satisfaction, but also has an indirect impact on employer satisfaction through the intermediate variable of employer perceived value, with an indirect effect of 0.09, which shows that employer perceived quality has a significant impact on employer satisfaction. The direct effect of employer perceived value on employer satisfaction is greater than other latent variables, which means that employer perceived value is the most significant variable that directly affects employer satisfaction. Although school image does not have a direct effect on employer satisfaction, it is determined by the overall level of university, the quality of teaching and learning, and the level of hardware and facilities, these factors also have direct effects on students' cultivation. Therefore, school image could have an extremely important impact on employer perceived quality and employer perceived value.

which is 0.39. From the real job market, employers adopt a ladder salary system and tend to pay higher salaries to graduates from 985 and 211 universities. Meanwhile, the direct effect of employer perceived quality on employer perceived value is also important, which is 0.22. Therefore, improving school image and employer perceived quality can help to increase employer perceived value.

This conclusion is consistent with the public cognition in reality, and the actual overall quality of graduates at work is the most important factor for employers, which directly determines employers' satisfaction.

5. CONCLUSION

From the research results of influencing factors of employers' satisfaction of logistics management graduates, we could find out that, school image, employer expectation, employer perceived quality and employer perceived value, all have a direct or indirect positive correlation to employer satisfaction, but the impact of these four variables on employer satisfaction is different. The total effect of employer perceived quality, employer perceived value, school image and employer expectation on employer satisfaction decreases in turn.

Generally speaking, the employers' satisfaction of logistics management graduates is not very high, so how to improve employers' satisfaction needs the joint efforts of colleges and students.

AUTHORS' CONTRIBUTIONS

Dan Liu was responsible for experimental design, Hao Yang was responsible for questionnaire survey, Feifei Guo analyzed data and wrote the manuscript, and Lanxin Zhang contributed to revising and editing.

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