Risk Management for the Quality of Educational Administration in Higher Vocational Colleges in Sichuan Province

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Abstract

Based on an in-depth review and exploration of risk management, educational administration, and stakeholder theories both domestically and internationally, this study proposes risk management strategies from the perspective of stakeholders to improve the quality of educational administration in higher vocational colleges in Sichuan Province, taking into account their specific situations and existing problems. The research objectives include: (1) To study the level of the factors affecting risk management to support the quality of educational administration in higher vocational colleges in Sichuan Province. (2) To study the supportive effect of risk management level in higher vocational colleges in Sichuan Province on the quality of educational administration. (3) To analyze the factors that affect the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province. (4) To provide suggestions on the factors affecting risk management in higher vocational colleges in Sichuan Province to promote the improvement of the quality of educational administration. Research methodology: Combining qualitative and quantitative research. The population used in the study was 976 people from 81 higher vocational colleges in Sichuan Province, including administrative staff, teachers, students, and other stakeholders, with an effective sample size of 976. Stratified sampling method was used. The research instruments used to collect research data include the Likert scales and personnel interview questionnaires. The statistical data used in data analysis include frequency, percentage, mean, standard deviation, Pearson correlation coefficient, and multiple regression analysis. The statistical measures used to test hypotheses are t-test and F-test.

The research results indicate that: (1) the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province is at a relatively high level. (2) The factor structure of 7 independent variables and 5 dependent variables was determined, and the fit of the risk management 12 factor model for the quality of educational administration in higher vocational colleges in Sichuan Province was evaluated. The fit index reached a good level, indicating that the logical relationship among the independent and dependent variables is acceptable. (3) As an important component of higher vocational education in China, higher vocational education in Sichuan Province has significant representativeness, and the results of this study are suitable for implementation in the entire field of higher vocational education in China. Suggestion: Government departments and higher vocational colleges at all levels of higher vocational education in China can use the results of this research as a guiding principle for formulating risk management policies, systems, and plans, establishing and improving risk management processes, performance evaluation indicators, and supervision and control systems, thereby promoting the high-quality and sustainable development of Chinese higher vocational education industry. Future research should emphasize the digital transformation of risk management and the impact of changes in

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the internal and external environment of higher vocational colleges, enrich more measurement projects, and conduct more multidimensional research on risk management.

Keywords: Risk Management; Educational Administration; Stakeholders; Higher Vocational Colleges

Introduction

With the continuous deepening of higher vocational education reform in China, higher vocational colleges are gradually transforming from government arranged institutions to legal entities that independently manage and bear civil liability. The marketization and popularization of higher vocational education have not only brought opportunities for the development in higher vocational colleges in Sichuan Province, but also greatly increased the risks of operating schools. Risk management is an essential and important part of higher vocational educational administration, and higher vocational colleges, as the main body of them, bear the important responsibility. Strengthening risk management in higher vocational colleges in Sichuan Province aims to establish a scientific and systematic risk management mechanism, effectively manage various potential and actual risks, improve the quality of educational administration, and achieve sustainable development.

The researcher clarified the research objectives, methodology, and instruments according to the following research ideas, conducted data collection and analysis, formed research results, made research discussion and conclusion, and put forward recommendations for the specific practice of this study and future extension research. Specifically, a literature review was conducted on the concepts and theories of higher vocational colleges, risk management, educational administration, and stakeholders. Based on the perspective of stakeholders in higher vocational colleges in Sichuan Province, effective sample data of 976 people from 81 higher vocational colleges in Sichuan Province were collected to study the risk management level of their educational administration quality, and further demonstrate the relationship between risk management and educational administration quality in them.

Guided by the research objectives, the study focused on the following research questions, including: (1) Why strengthen the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province based on stakeholders? (2)What are the stakeholders and their relationships in the process of operating higher vocational colleges in Sichuan Province? (3) What is the degree of impact of various stakeholders on the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province during the process of operating them? (4) What are the types, causes, and countermeasures of the risks for the quality of educational administration in higher vocational colleges in Sichuan Province in the process of operating them? (5) How to strengthen the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province based on the interests' demands of their core stakeholders?

Research Objectives

(1) To study the level of the factors affecting risk management to support the quality of educational administration in higher vocational colleges in Sichuan Province.

(2) To study the supportive effect of risk management level in higher vocational colleges in Sichuan Province on the quality of educational administration.

(3) To analyze the factors that affect the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province.

(4) To provide suggestions on the factors affecting risk management for higher vocational colleges in Sichuan Province to promote the improvement of the quality of educational administration.

Literature Review

Concepts and Theories Related to Risk Management

Concept of Risk Management

Risk management refers to the process of managing various explicit and implicit risks in all aspects of organizational management and operation around the overall goals of the organization, according to certain processes, methods, and approaches, in order to avoid and eliminate risks, or minimize the negative impact of risks. At the same time, it is necessary to establish a sound risk management system and cultivate a good risk management culture. (Dong'ao Accounting Online, 2020)

Process of Risk Management

The risk management process consists of "risk identification - risk assessment - risk response - monitoring and review" (Delta Capital Markets Ltd., 2018). The starting point is "risk identification", which includes "dividing the risk scope, investigating the risk background and confirming the risk standard", and the end point is "monitoring and review".

Main Body of Risk Management

The main body of risk management is the stakeholders of risk management.

The term "stakeholder" was first recorded in the Oxford Dictionary (1708). In 1929, a manager of General Electric put forward the concept of "the company should serve stakeholders" for the first time in his inaugural speech (Chen H., 2011).

In 1932, Edwin Merrick Dodd, a professor of Harvard Law School, put forward the concept of Corporate Social Responsibility (CSR). He believed that managers should consider the interests of communities, employees, customers and other stakeholders when managing companies (Dodd, E. M., 1932). It was the first time to put forward the concept of stakeholders, later, regarded as the beginning of stakeholder theory by the academic community.

In 1963, the word "stakeholders" was used by the Stanford Research Institute and was proposed and defined as a clear theoretical concept: stakeholders are "those groups without whose support the organization would cease to exist" (Friedman, A. L., & Miles, S., 2006).

The stakeholder theory has really formed a relatively complete framework system, thanks to the joint efforts of a group of representative western management scientists and economists, such as Robert Edward Freeman, Archie B. Carroll, Thomas Donaldson, Margaret M. Blair, William Crittenden Frederick, Jonathan P. Charkham, Max B. E. Clarkson, Glenn R. Carroll, David Wheeler, Ronald K. Mitchell, and T. M Jones, etc.

The research on stakeholder theory in China is relatively late. Jia Shenghua and Chen Honghui (2003) believed that enterprises must abandon the business philosophy of "everything serves the interests of shareholders", and properly meet the interests of many stakeholders in the enterprises (Jia & Chen, 2003).

In a word, stakeholder theory is the main theoretical basis and support for business strategy, corporate governance, and performance evaluation research and so on. From the current research status, most of them are normative studies, with relatively few empirical studies, mainly involving the definition and classification of stakeholders (Chen H., 2011).

Risk Management and Sustainable Development of Higher Vocational Education in Sichuan Province

Risk management accompanies the entire life process of an organization and largely determines its survival and development.

The sustainable development of higher vocational education in Sichuan Province means that, it can meet the needs of the people to voluntarily accept higher vocational education, serve the economy, and contribute to the society. It has the sustainability, continuity and extensibility of development (Zhang J., 2009).

Effective risk management is conducive to promoting the sustainable development of higher vocational education in Sichuan Province.

Connotation and Theories Related to Educational Administration

Connotation of Educational Administration

From a national macro perspective, educational administration is a management activity carried out by the state on the education system. From the micro level of the educational organization that undertakes the educational function, educational administration is a series of activities that the educational organization plans, organizes, leads, controls and innovates the educational and teaching tasks within the educational organization under the leadership of the national education administrative department.

Representative Theories of Educational Administration

Representative theories of western educational administration

Classical educational administration organization theory

The classical educational administration organization theory has experienced three different forms, namely, Frederick Winslow Taylor's scientific management theory, Henri Fayol's administrative management theory, Max Weber's hierarchical management theory (also known as "bureaucratic management theory") (Huang W., 2001).

The classical educational administration organization theory emphasizes from different angles that educational organizations should take improving the efficiency of educational administration as a means to achieve good management benefits.

Humanism educational administration theory

In 1962, the annual book of the American Association for Management and Curriculum Development, chaired by Arthur W. Combs, published a special article entitled "Understanding, Behavior, Formation - A New Focus of Education", which elaborated the humanistic education theory (Combs, A. W., 1962).

The main points of humanism educational administration theory include: the goal of education is to cultivate "complete people", emphasize human factors and "student-centered", advocate meaningful learning and spontaneous experiential learning; The education process is defined as the "self-realization" process of human beings, advocating the humanization of curriculum; Schools should create a free psychological atmosphere, lay stress on the establishment of teacher-student relationship and the development of students' emotions.

Scientific theory of educational administration

It is the theory of educational administration formed by introducing the scientific management theory into the practice of educational administration. That is to use the scientific management principle of Taylor for reference, systematically apply, refine and summarize the specific functions, methods and division of labor of educational administration, form a guiding theoretical framework and content collection, and achieve the unity of inheritance and innovation, science and humanity.

Post-modern educational administration theory

The full name of "post-modern" is "postmodernism", which originated in the 1960s in Europe and America. It is an emotion that believes that human beings can and must surpass modernity. Post-modern educational administration theory believes that education should focus on the pursuit of people's spiritual world; education should explore and respect each other's ideas and existence; educational administration is a model that can be changed.

The theory of human relations in educational administration

The theory of interpersonal relationship in educational administration starts from humanism and explores the improvement of the efficiency of educational administration. It can neither be conceived purely from the perspective of organization nor solved completely from the scientific work analysis method. The primary way to improve the efficiency of educational administration is to establish organizational, dynamic and harmonious interpersonal relationships. Educational managers should be committed to arousing the strong work desire and motivation of the organization members, and fully understand their own values and contributions to the organization.

Triple helix model of educational administration

In the 1990s, Henry Etzkowitz and Loet Leydesdorff first proposed the triple helix model. The theory holds that universities, industries, and governments, as participants in social activities, are not only the elements of innovation, but also the main body of innovation activities. Universities are the key to the formation of knowledge spaces, agglomeration spaces, and innovation spaces (Etzkowitz, H. et al., 1997).

Reviewing the origin and development of western educational administration theory, the purpose is to find the relevance with the development of Chinese educational administration theory, make comparative analysis of the contemporary educational administration theories, predict their future development trend, and make them better serve the practice of educational administration.

Representative theories of Chinese educational administration

"Industry-University-Research Collaboration" Theory

Chinese scholars have studied the theory of "Industry-University-Research Collaboration" since the 1980s" (Zhang & Huang, 2013). In China, It generally refers to the collaboration among universities, scientific research institutions and industry. Its essence is the

effective combination of various production factors required to promote technological innovation.

The theory of "trichotomy" in educational administration

Adhering to Chinese thousands of years of excellent traditional culture and positive education philosophy, and absorbing the essence of western classical management theory, interpersonal relationship theory and other theories and ideas, Chinese educational administration theory and practice increasingly attach importance to the human factor in educational administration, pay attention to the cultivation of the ideological quality of the educated, and pursue the public welfare value and fair value of education, which is far greater than its economic value. It has formed the "trinity" educational administration thought and theory with morality, humanism and efficiency as the core.

In summary, through the analysis of the most representative educational administration theories in the West and China, it is found that researchers in both China and Western countries focus on integrating multiple disciplines such as management, psychology, behavior, sociology, public relations, ecology, etc. in the research process of educational administration, and increasingly attach importance to human factors, paying more and more attention to the intrinsic improvement and sustainable development of educational quality.

Risk Management Framework and Related Theories for Educational Administration in Higher Vocational Colleges in Sichuan Province

Relationship Between Risk Management and Educational Administration

School education, like other social practice activities of human beings, is risky. Only by correctly understanding the objectivity of the school educational administration risk, carefully studying and taking preventive and control measures of the risk, and carrying out educational and teaching administration activities safely and efficiently, can better play the role of school teaching and educating students (Tang H., 2011).

Obviously, risk management is a part of educational administration, which covers the functions and responsibilities of risk management.

The Influence of Stakeholders of Higher Vocational Colleges in Sichuan Province on the Psychology, Attitude and Behavior of Risk Management for Educational Administration

From the perspective of the different interest demands and psychological needs of different stakeholders of higher vocational colleges, their psychological impact on educational risk management is also different. It is necessary for the stakeholders to do a good job in psychological construction when facing various explicit and implicit risks.

The risk aversion attitude of stakeholders of higher vocational colleges will inhibit the promotion of their natural risk perception on education risk management. (Shang Y., et al., 2020)

Thought determines idea, idea determines attitude, attitude determines behavior, and behavior determines result. The stakeholders of higher vocational colleges in Sichuan Province, especially the management team led by principals, should have awareness of educational risk management, consciously strengthen risk assessment and analysis, formulate risk management plans, continuously revise and improve risk management mechanisms, and constantly standardize and innovate risk management behaviors, so as to achieve good risk management results.

Research Methodology

The researcher adopted a combination of qualitative and quantitative research methods, using methods such as questionnaire surveys, interviews, and observational experiments to collect data.

Population and Sample

The population used in this study is stakeholders such as teachers, students, staff and others from 81 higher vocational colleges in Sichuan Province, which include 47 public and 34 private colleges (Ministry of Education of the People's Republic of China, 2022). The participants include presidents (deans), vice presidents (vice deans), directors of academic affairs offices, department heads (second level college deans), full-time teachers, student representatives, and other stakeholders from the colleges.

According to Andrew L. Comrey and Howard B. Lee (1992), the sample size adequacy reached good, with 300=good and 500=very good (Comrey, A. L., & Lee, H. B., 1992). Therefore, the researcher distributed 1215 Likert scales and ultimately returned 976 valid Likert scales, with a response rate of 80.33%, which also meets the requirement of Andrew L. Comrey and Howard B. Lee (1992) for very good sample size adequacy.

Research Instrument

The Formation of Quantitative Research Instruments

The steps are as follows:

Step 1: To conduct research on relevant literature, especially those related to the variables in the research framework.

Step 2: To write operational definitions for all variables in this study.

Step 3: To design the factors and questions of both Likert measurement tables and survey questionnaires for the variables.

Step 4: To test the validity of the content.

Step 5: To test the reliability of the content.

Step 6: To improve and perfect various research instruments required for this study.

Design of Likert Scales

American psychologist Rensis Likert proposed the Likert scale in 1932 to evaluate the attitudes, beliefs, emotions, or behaviors of respondents towards a certain viewpoint or phenomenon. This scale consists of a set of statements that provide respondents with a structured format. Its basic idea is to divide the respondents' attitudes towards a certain question into five levels, and the scoring criteria are as follows: Strongly Agree by 5 points; Agree by 4 points; Not Necessarily (neutral) by 3 points; Disagree by 2 points; Strongly Disagree by 1 point (Likert, R., 1932).

The researcher designed four Likert measurement forms: The Likert Scale on Types of Risks for Educational Administration in Higher Vocational Colleges in Sichuan Province (12 Factors, 65 Questions); The Likert Scale on Types of Stakeholders of Higher Vocational Colleges in Sichuan Province (10 Factors, 31 Questions); The Likert Scale on the Types of Independent Variables ("Risk Management") (7 Factors, 49 Questions); The Likert Scale on the Types of Dependent Variables ("Educational Administration Quality") (5 Factors, 35 Questions).

Data Collection

Data Collection Methods

The data in this study mainly includes quantitative and qualitative data. Quantitative data comes from survey questionnaires and interview questions, while qualitative data comes from field observations, interviews, and informal discussions.

Data Collection Steps

Step 1: Based on the research objectives, the Likert scales and survey questionnaires were designed by analyzing relevant literature, and their reliability (reliability) was tested.

Step 2: To utilize the "Wenjuanxing" online survey platform and send survey questionnaires to respondents from 81 higher vocational colleges in Sichuan Province via email, WeChat, QQ and other channels and methods, and invite them to reply to them.

Step 3: To distribute four Likert scales to 81 higher vocational colleges in Sichuan Province, with at least 10 copies of each Likert scale distributed to each school.

Step 4: To test the validity (reliability) of the data and consider an acceptable response rate.

Step 5: To perform data cleaning (data preprocessing) on the collected data, including renaming column names, data sorting, outlier handling, and so on.

Data Analysis

Data Preparation

The researcher collected data through Likert scales, survey questionnaires, experiments, and records. After repeated debugging, a large sample collection method was ultimately adopted to ensure the statistical significance and reliability of the results.

Data Analysis for Testing Statistical Assumptions

The researcher used qualitative variables to analyze the frequency and percentage of data, and used indicators such as mean and standard deviation to study the distribution characteristics of continuous variables in the conceptual framework.

Analysis Answer Research Questions

Based on the correspondence between the number of dependent variables and independent variables, this study used multiple regression analysis method, which is the regression analysis of multiple dependent variables on multiple independent variables.

Research Conceptual Framework

The underlying logic for constructing the research conceptual framework is that the educational administration includes risk management, and efficient risk management is conducive to improving the quality of educational administration. Therefore, "Risk Management (RM)" is the independent variable, and "Educational Administration Quality (EAQ)" is the dependent variable. In the research hypothesis, the researcher set up seven independent variables from the dimensions of "Risk Management (RM)" elements and processes, and five indicators from the dimensions of "Educational Administration Quality (EAQ)" core elements. All independent variables have positive impacts on all dependent variables, and "Effective Risk Management Can Help Improve Educational Administration Quality". As shown in Figure 1:

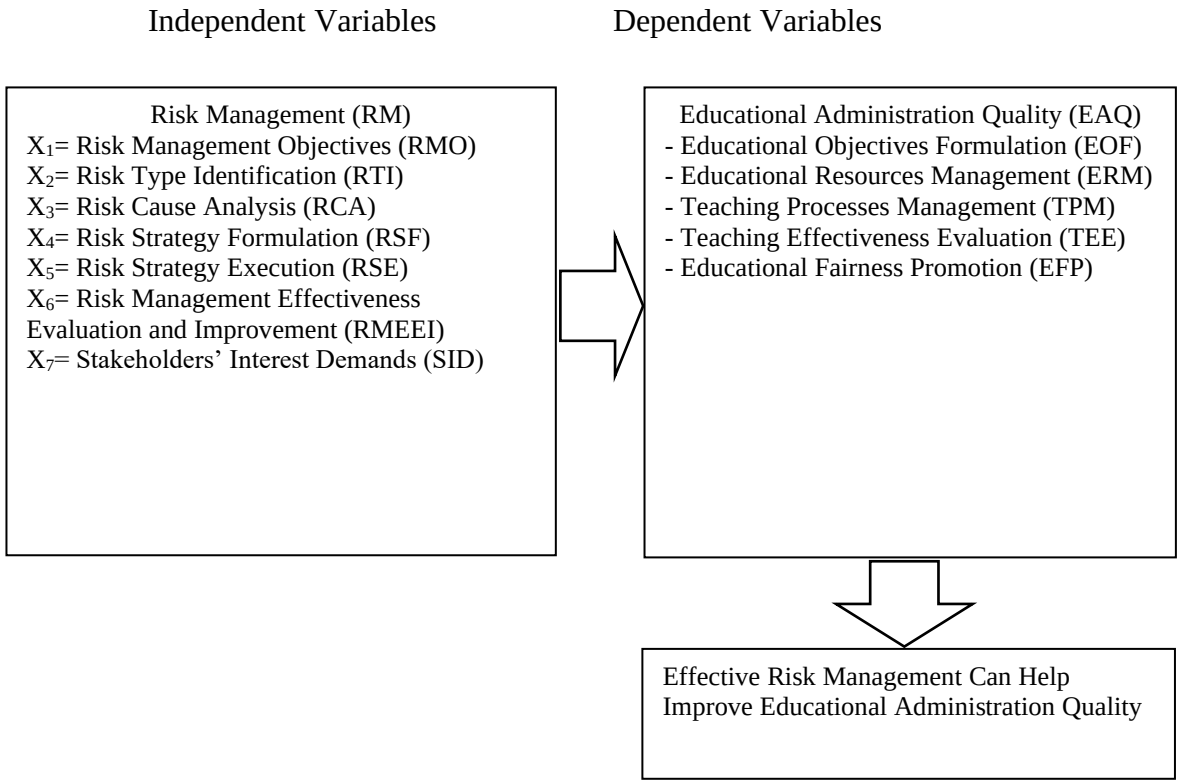

Figure 1 Research Conceptual Framework

Research Results

Reliability and Validity Testing of Likert Scale and Survey Questionnaire

The researcher conducted an overall reliability test on the Likert scale using Cronbach alpha coefficient values, as shown in Table 1.

Table 1 Cronbach Alpha Coefficient Values

Variables (Factors)	N of Items	*n*	Cronbach α
RMO	7	976	0.932
RTI	7	976	0.931
RCA	7	976	0.932
RSF	7	976	0.926
RSE	7	976	0.922
RMEEI	7	976	0.923
SID	7	976	0.924
EOF	7	976	0.926
ERM	7	976	0.921

Table 1 Cronbach Alpha Coefficient Values

Variables (Factors)	**N of Items**	***n***	**Cronbach α**
TPM	7	976	0.927
TEE	7	976	0.926
EFP	7	976	0.925
Total	84	976	0.985

If this value is higher than 0.8, it indicates that the questionnaire has a very high level of credibility. From Table 1, it can be seen that the Cronbach's alpha coefficient values of 12 variables (factors) are all above 0.9, and the overall reliability coefficient of 84 measurement items is 0.985, which is greater than 0.8, indicating that the reliability quality of the research data is very high.

The researcher conducted an overall validity test on the Likert scale using KMO value and Bartlett Test, as shown in Table 2.

Table 2 KMO Value and Bartlett Test Values

KMO		0.987
Bartlett Test	Approx. Chi-Square	64075.937
	df	3486
	p value	0.000

When conducting validity tests, if the KMO value is higher than 0.8 and the Bartlett sphericity test value, i.e. the p-value is less than 0.05, it indicates that the data can be used for factor analysis research. From Table 2, it can be seen that the KMO value is 0.987, which is greater than 0.8, and the P value is 0, which is less than 0.05, meeting the prerequisite requirements for factor analysis.

Descriptive Analysis of 7 Independent Variables and 5 Dependent Variables

Table 3 Descriptive Analysis

Variables	**Items (Factors)**	**N of Samples**	**Min**	**Max**	**Mean**	**Std. Deviation**	**Median**
Independent	RMO	976	1.000	5.000	3.486	0.992	3.714
	RTI	976	1.000	5.000	3.505	0.996	3.714
	RCA	976	1.000	5.000	3.515	1.023	3.857
	RSF	976	1.000	5.000	3.530	0.987	3.857

Table 3 Descriptive Analysis

Variables	Items (Factors)	N of Samples	Min	Max	Mean	Std. Deviation	Median
Variables (7 Factors)	RSE	976	1.000	5.000	3.528	0.965	3.857
	RMEEI	976	1.000	5.000	3.560	0.966	3.857
	SID	976	1.000	5.000	3.513	0.977	3.857
	EOF	976	1.000	5.000	3.542	0.972	3.857
	ERM	976	1.000	5.000	3.547	0.950	3.857
Dependent Variables (5 Factors)	TPM	976	1.000	5.000	3.525	0.987	3.857
	TEE	976	1.000	5.000	3.493	0.983	3.857
	EFP	976	1.000	5.000	3.545	0.983	3.857

Table 3 contains statistical data for a total of 12 variables (factors), including 7 independent variables (factors) and 5 dependent variables (factors), with an effective sample size of 976. In this dataset, the range of measurement items ranges from a minimum value of 1.000 to a maximum value of 5.000. For the mean values (central trends) of each measurement item, the mean values of the 12 variables (factors) show certain differences, ranging from 3.486 (RMO) to 3.560 (RMEEI), respectively; For Standard Deviation value, the 12 variables (factors) range from 0.950 (ERM) to 1.023 (RCA), with only one variable (factor) being the Standard Deviation value of RCA exceeds 1; For the Median value, the variable (factor) RMO and variable (factor) RTI are both 3.714, while the Median values of the remaining ten variables (factors) are 3.857.

Multiple Regression Analysis

The multiple linear regression model is: $Y=\beta_0 + \beta_1X_1 + \beta_2X_2 +\cdots+\beta_nX_n+\in$, where Y is the dependent variable; X_1, X_2, ..., Xn are independent variables; β_0 is the intercept term; β_1, β_2, ..., βn are the regression coefficients of each independent variable; $\in$ is an error term that represents all unexplained random errors.

The following is a linear regression analysis of the five dependent variables EOF, ERM, TPM, TEE, and EFP.

Among the 5 dependent variables, let Y_1 = "Educational Objectives Formulation (EOF)", Y_2 = "Educational Resources Management (ERM)", Y_3 = "Teaching Processes Management (TPM)", Y_4 = "Teaching Effectiveness Evaluation (TEE)", and Y_5 = "Educational Fairness Promotion (EFP)".

Among the 7 independent variables, let X_1= "Risk Management Objectives (RMO)", X_2= "Risk Type Identification (RTI)", X_3= "Risk Cause Analysis (RCA)", X_4= "Risk Strategy Formulation (RSF)", X_5 = "Risk Strategy Execution (RSE)", X_6 = "Risk Management Effectiveness Evaluation and Improvement (RMEEI)", and X_7 = "Stakeholders' Interest Demands (SID)".

Table 4 Multivariate Linear Regression Analysis of the Dependent Variable EOF

	Unstandardized Coefficients		**Standardized Coefficients**	***t***	***p***	**Collinearity Diagnosis**	
	B	**Std. Error**	***Beta***			**VIF**	**Tolerability**
Constant	0.362	0.091	-	3.960	0.000**	-	-
RMO	0.237	0.030	0.242	7.776	0.000**	2.184	0.458
RTI	0.066	0.031	0.068	2.115	0.035*	2.310	0.433
RCA	0.099	0.030	0.105	3.330	0.001**	2.228	0.449
RSF	0.164	0.031	0.166	5.256	0.000**	2.269	0.441
RSE	0.079	0.033	0.079	2.416	0.016*	2.393	0.418
RMEEI	0.167	0.033	0.166	5.115	0.000**	2.378	0.420
SID	0.092	0.033	0.092	2.803	0.005**	2.455	0.407
R^2	0.572						
Adj R^2	0.569						
F	*F* (7,968) = 184.897, *p* = 0.000						

Dependent Variable: EOF

*p<0.05 **p<0.01

From Table 4, it can be seen that the multiple linear regression model formula for the dependent variable EOF is: Y_1=0.362 + 0.237 X_1 + 0.066 X_2 + 0.099 X_3 + 0.164 X_4 + 0.079 X_5 + 0.167 X_6 + 0.092 X_7 + ∈. The R-squared value of the model is 0.572, which means that the seven independent variables RMO, RTI, RCA, RSF, RSE, RMEEI, and SID can explain 57.2% of the variation in the dependent variable EOF. When conducting *F*-test on the model, it was found that the model passed the *F*-test (F=184.897, p=0.000<0.05), which indicates that at least one of the seven independent variables will have an impact on EOF. In addition, when testing the multicollinearity of the model, it was found that the Variance Inflation Factor (VIF) values in the model were all less than 5, indicating that there was no multicollinearity problem and the model was good.

The regression coefficient value of RMO is 0.237 (t=7.776, p=0.000<0.01), indicating that RMO will have a significant positive impact on EOF.

The regression coefficient value of RTI is 0.066 (t=2.115, p=0.035<0.05), indicating that RTI will have a significant positive impact on EOF.

The regression coefficient value of RCA is 0.099 (t=3.330, p=0.001<0.01), indicating that RCA will have a significant positive impact on EOF.

The regression coefficient value of RSF is 0.164 (t=5.256, p=0.000<0.01), indicating that RSF will have a significant positive impact on EOF.

The regression coefficient value of RSE is 0.079 (t=2.416, p=0.016<0.05), indicating that RSE will have a significant positive impact on EOF.

The regression coefficient value of RMEEI is 0.167 (t=5.115, p=0.000<0.01), indicating that RMEEI will have a significant positive impact on EOF.

The regression coefficient value of SID is 0.092 (t=2.803, p=0.005<0.01), indicating that SID will have a significant positive impact on EOF.

Similarly, multiple linear regression analysis was conducted on the other four dependent variables ERM, TPM, TEE, and EFP, and the R-squared values of the corresponding models were measured and passed the F-test. In addition, the multicollinearity of the model was tested, and the Variance Inflation Factor (VIF) values in the model were all less than 5, indicating that there is no multicollinearity problem and the model is good.

Discussion

This study employed several measures to reduce the Type I error rate and prevent inaccurate conclusions from being drawn. Type I error refers to the error of rejecting an actually valid and correct assumption, which is known as "abandoning the truth". Its probability is usually expressed as α (Lin C. L., 2012). Before conducting preliminary analysis, the dataset was screened for prank responders (Robinson-Campian, J. P. et al., 2014). The data provided by these prank responders was removed from the sample dataset.

In this study, there were a total of 84 measurement items consisting of 7 independent variables and 5 dependent variables. Finally, 976 valid samples were collected, achieving the optimal sample size. Prior to conducting Multiple Regression Analysis (MRA), the adaptability of the data was tested using Bartlett's sphericity test and Kaiser-Meyer-Akin (KMO) test, all of which indicated that the dataset was sufficient for conducting MRA. The results of MRA have revealed the logical relationships among the independent variables (Risk Management) and the dependent variables (Educational Administration Quality) in this study.

Conclusion

The researcher used quantitative and qualitative research methods to sort out the conditions for strengthening the risk management of educational administration quality in higher vocational colleges in Sichuan Province, determined the factor structure of 7 independent variables (factors) and 5 dependent variables (factors), designed Likert scales and personnel interview questionnaires, and used 976 valid samples for statistical analysis to evaluate the fit of the 12-factor model of risk management quality in vocational colleges in Sichuan Province. The fitting indices reached good, indicating that the logical relationships among independent variables and dependent variables is acceptable.

In order to verify the internal consistency of each factor in the 12-factor model, the Cronbach's alpha values of each factor in the model were measured to be between 0.921 and 0.932. According to Lee J. Cronbach (1951), a Cronbach's alpha coefficient value of 0.7-0.8 indicates that the scale has considerable reliability (Cronbach, L. J., 1951). The measurement results show that all 12 variables (factors) have acceptable reliability.

To sum up, the research objective is to strengthen the risk management for the quality of educational administration in higher vocational colleges in Sichuan Province, deeply analyze the influencing factors and internal logic of risk management, so that they can control the probability of risk occurrence within the lowest range, quickly and efficiently handle risk events, and achieve the effectiveness of risk management, thereby improving the quality of educational administration and ultimately achieving healthy and sustainable development. The research results have achieved the expected research objectives.

Recommendations

Recommendations for Practical Application

(1) The government departments in charge of higher vocational education in China at all levels can use this research results as a guiding principle for formulating risk management policies and systems, further improving the process of risk management, performance evaluation indicators, and supervision and control systems.

(2) It is recommended that higher vocational colleges establish specialized risk management departments to promote the application of this research results, and establish and improve risk management systems and contingency plans based on their own actual situations.

(3) Higher vocational colleges should listen to the opinions and suggestions of multiple stakeholders and strengthen information sharing among internal departments when strengthening risk management.

Recommendations for Further Research

(1) Further research should emphasize the digital transformation of risk management for the quality of educational administration in higher vocational colleges in Sichuan Province and the impact of changes in the internal and external environment of them.

(2) More measurement projects can be designed to evaluate the types and relationships of risks for the quality of educational administration in higher vocational colleges in Sichuan Province, and to recognize the importance and operational logic of effective risk management in improving the quality of educational administration from more dimensions.

(3) Further collect the latest research results on risk management for higher vocational colleges at home and abroad, as well as qualitative data on external risks of higher vocational colleges. Based on the perspective of the impact of the external environment on risk management for higher vocational colleges in Sichuan Province, conduct more dimensional related research.

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