A Mixed Method Research of Factors Affecting Faculty Retention in Four-Year Public Higher Education Institutions in Guangxi Zhuang Autonomous Region People's Republic of China

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Received: May 16, 2019; Revised: June 11, 2019; Accepted: June 12, 2019

Abstract

The purpose of this research was to identify factors affecting faculty retention in four-year public higher education institutions in Guangxi China. The samples of this research were 460 randomly sampling full-time teachers. There were 4 latent variables: job satisfaction (JS), organizational commitment (OC), job embeddedness (JE), and faculty retention (FR), which were measured by 20 observed variables. The research instruments for the quantitative phase were questionnaires, which had the reliability coefficients from .90 to .943. Data were analyzed to obtain mean, standard deviation, skewness, and kurtosis. Structural equation modeling was employed to examine the relationships of variables and test the consistency of hypothesis model with empirical data.

This research found that the hypothesis model of factors affecting faculty retention in higher education institutions in Guangxi China were confirmed to be in consistent with the empirical data, with χ^2 (164) = 172.639, p = .30, CFI = .997, RMSEA = .011, SRMR = .029. The variables in the model could describe the factors affecting faculty retention in higher educational institutions in Guangxi China variance at 54.6 percent (R^2=.546). There were three variables that had direct positive effect on faculty retention in higher education institutions in Guangxi China: job embeddedness, job satisfaction, and organizational commitment with influence coefficient of .345, .344, and .274 respectively at the significant level of .01. There were two variables that had indirect positive effect on faculty retention in higher education institutions in Guangxi China: job embeddedness and job satisfaction with influence coefficient of .222 and .089 respectively at the significant level of .01. The total effect consisted of three variables, job embeddedness, job satisfaction, organizational commitment, with influence coefficient of .576, .433, and .274 respectively at the significant level of .01.

Keywords: Job Embeddedness, Organizational Commitment, Job Satisfaction, Faculty Retention, Higher Education Institutions in Guangxi China

Introduction

Research Background

As a knowledge-intensive industry, higher education depends on qualified faculty members as a major resource in teaching of specific disciplines. The ability to provide quality instruction relies greatly on the institution's ability to recruit and retain qualified faculty. (Harrison & Hargrove 2006) It is first and foremost the quality of the people that ultimately determine the quality of an institution. (Collins 2005) Therefore, faculty recruitment and retention should be given special attention.

In addition, the talents competition in China has bring the problem of faculty retention into the center of academic research. In 2015, the State Council of China released a document called Implementation Measures to Coordinate Development of World-class Universities and First-class Disciplines. (State Council of China 2015) The plan, also known as the "Double-First Class" initiative, aims to ultimately build a number of world class universities and disciplines by the end of 2050, in an effort to make China an international higher education power. Universities selected to participate in the plan will be supported and sponsored greatly by the central and provincial government finance. After the announcement of the initiative, many provinces have issued their "Double First-Class Plan" to support the development of universities in their provinces. Guangdong province alone has set a target to raise RMB 5 billion over the period of the Thirteenth Five-Year Plan, to support the construction of "Double First-Class" institutions and disciplines in that province. Under this background, competition for talents becomes a new normal. Universities in east China provide tempting salary and treatment to attract top talents in the fields. The competition caused the talent flow from less developed west China to well-developed east China. How to keep talents become a survival problem for universities in western China.

Since colleges and universities in Guangxi face the same problems as other universities in western China, it is quite necessary to fully understand factors that attribute to faculty's stay intention. The investigation of factors affecting the stay intention of faculty will help administrators of higher education institutions develop effective retention strategies.

literature Review

The history of employee turnover research can be traced back to the beginning of 20th Century. Economists, who were the first to lead the research field, mainly studied the influence of macro-level factors such as wage, labor market structure and unemployment rate on employee turnover. Nowadays, scholars mainly focus on the construction of the turnover model. Much of the theory is heavily influenced by March and Simon's (1958) concept of organizational equilibrium. Besides, the other four major turnover models emerged in the study are (1) Porter & Steers' (1973) theory of met expectations (2) Mobley's (1977) linkage model, (3) Lee and Mitchell's (1994) unfolding model, (4) Price-Mueller Model of Voluntary Turnover. (Price 2001)

In the past decades, scholars have conducted a large number of theoretical and empirical studies to examine the influence of work-related factors on employee turnover

intentions. Attitudinal variables such as job satisfaction, organizational commitment were tested as intermediary variables. But Hom and Griffeth (1995) and Griffeth et al. (2000) found that such attitudinal variables account for only 4-5% of the variance in turnover decisions. The result calls researchers to consider factors beyond job attitudes and job alternatives to fully understand the psychology of turnover.

Mitchell et al. (2001) developed the theory of job embeddedness to explain why employees stay in their organizations. Unlike traditional models of turnover, job embeddedness represents a focus on the accumulated, non-affective reasons as to why employees choose to stay with their organization. Mitchell et al. (2001) claimed that their constructs addresses three situational dimensions, each of which are considered both on- and off-the-job. The first of these situational dimensions is links, which is "the extent to which people have links to other people or activities". (Mitchell et al. 2001) The second dimension, fit, is "the extent to which their jobs and communities are similar to or fit with the other aspects in their life spaces" (Mitchell et al. 2001). The third factor is sacrifice, which is "the ease with which links can be broken– what they would give up if they left, especially if they had to physically move to other cities or homes". (Mitchell et al. 2001) Thus, with the three factors encompassing what makes employees embedded both on- and off-the-job, there exists a 3x2 matrix of "forces" that cause employees to become embedded within their jobs. He believed that the high employee turnover rate was due to the lack of "embedded" work.

Based on the previous theory and research, this study tested the effects of both traditional attitudinal variables, job satisfaction and organizational commitment, and job embeddedness on faculty retention, hoping to better understand the reason why teachers stay at the present college or university.

Research Objectives

There are two objectives of this research:

1. to construct a structural equation model of factors affecting faculty retention in higher education institutions in Guangxi China;

2. to confirm the model with empirical data.

Research Methodology

Research Design

The final purpose of this study is to identify and confirm a structural equation model of factors affecting faculty retention at higher educational institutions in Guangxi China. This modeling process entailed a two-part analysis: development of the measurement models and analysis of the structural models. An exploratory mixed methods research was used to guide the design of these two phases. The collection and analysis of a qualitative first phase was used to identify the

hypothesized structural equation model and a quantitative phase is followed to evaluate the hypothesized model. The two phases are linked by an intermediate phase. During the intermediate phase, data analyzed in the first phase is used to develop an instrument to be used during the second phase. The use of an exploratory mixed methods design was justified based on the background literature research and on the purpose of the study.

To be specific, in the first qualitative phase, in-depth interview of faculty members, and case study of an outstanding college or university were conducted to collect data for the development of both the measurement and structural models of job satisfaction, organizational commitment, job embeddedness and faculty retention. At the same time, questionnaire used in the second phase will be developed. During the second phase, survey was used to collect data and then the hypothesized model was tested and modified.

Qualitative Stage

Population and Sampling

The target population of this study is defined as all the full-time faculty members in 4-year public colleges and universities in Guangxi China. By the end of 2016, there are 24 4-Year public colleges and universities and the total number of full-time faculty members is 21,928.

For the in-depth interview, purposive sampling was used to identify qualified participants for this study. The names of participants were initially determined by the chairperson of human resource department of the selected college or university based on their job responsibilities and academic ranks. However, respondents will also be selected on the basis of the researcher's individual judgment where permitted on the ground that they could provide the necessary information needed for the research. Finally, 5 participants were selected, including 1 administrator, 1 expert in Educational administration, 3 college teachers.

For the case study in the qualitative phase, purposive sampling was used as a sampling strategy. To select the most suitable university for this study, the researcher got suggestion from three chairperson of human resource department of different universities, namely Yulin Normal University, Guangxi University for Nationalities, and Guangxi University. Qinzhou University was finally selected to be the subject for the case study.

Instruments

For the qualitative phase, a semi-structured interview guide was used to conduct the interviews for the study. To ensure the content validity of the in-depth interview, the interview questions were read and checked by 2 experts in English language and 3 experts in education. Miss-wording and inappropriate expressions were revised according to the result of experts' evaluation.

Data Collection

Face to face in-depth interviews and a case study were employed to collect data in the first qualitative phase.

Data Analysis

For the qualitative phase, the data analysis procedures include the use of more than one technique, as recommended by Onwuegbuzie and Leech (2007), to increase the reliability of the data. The two techniques used were the constant comparison method and the classical content analysis method. A classical content analysis was conducted using the codes developed during the constant comparison analysis. During the analysis, the frequency of each code was counted to identify the most commonly discussed concepts.

Quantitative Stage

Population and Sampling

The target population of this study are all the full-time faculty members in 4-year public colleges and universities in Guangxi China. By the end of 2016, there are 24 4-Year public colleges and universities and the total number of full-time faculty members is 21,928.

Two-stage sampling was used in this study. In the first stage, the 24 colleges and universities were classified into five types according to their characteristics. And then one or two colleges or universities were sampling randomly from each cluster. In the second stage, faculty members were sampling randomly sampling from the colleges and universities which were selected in the first stage to participate in this research. Finally, the sample of this study consisted 460 full time teachers from seven 4-year public colleges and universities in Guangxi China.

Table 1 Randomly sampling Universities and Sample Size Distribution

University Type	Total Number	Name of University	Sample Size
Comprehensive	7,724	Guangxi University for Nationalities	95
		Hezhou University	65
Medical	3,442	Guangxi Medical University	72
Normal	4,497	Yulin Normal University	36
		Guangxi Normal University	60
Science and Technology	3,513	Guilin University of Technology	74
Others	2,758	Guangxi Arts University	58
Total	21,928	Total	460

Instrument

Instrument for this study is a questionnaire with five parts. Part one is demographic questions. Part two to part five are questionnaires of variables, namely job satisfaction, organizational commitment, job embeddedness, and faculty retention. Each question except of the demographic ones was a 5-point Likert item from “strongly disagree” to “strongly agree”.

Job satisfaction questionnaire consisted of 6 dimensions and 18 items with Cronbach's alpha of .92. The organizational commitment questionnaire for this study consisted of four dimensions and 15 items, with Cronbach's alpha of .94. The job embeddedness questionnaire for this study consisted of six dimensions and 20 items, with Cronbach's alpha of .92. The last part is faculty retention questionnaire measured by 4 items, with Cronbach's alpha of .90.

Data Collection and Analysis

A survey was conducted to collect data; both paper-and-pencil survey and an online survey were employed. The online survey was first posted on professional survey website Wenjuanxing and then send to participants via Wechat, a popular networking application in China. In total, 460 effective questionnaires were received, including 314 paper-and-pencil questionnaires and 146 online questionnaires.

The data collected by questionnaire survey was analyzed according to the following steps: 1) IBM SPSS25 was used to analyze the mean, standard Deviation, Skewness and Kurtosis; 2) Confirmatory factor analysis of job satisfaction, organizational commitment and job embeddedness were conducted using Mplus 7.0; 3) The hypothesized model was tested using Mplus 7.0.

Data Analysis

Qualitative Result

The analysis of qualitative data emerged three key findings, which were illustrated below in detail.

1. All participants (100%) pointed out that job satisfaction is very important to the retention of faculty. When job satisfaction was talked about, Personal development, well-fare package, and work environment outstood other factors.

2. All participants (100%) believed that job embeddedness related factors are important when they were considering their stay intention especially for the married faculty. These job embeddedness related factors included work of spouse, education of child, living environment, mainly housing, as well as match to work.

3. Most of the participants agreed that organizational commitment would affect the retention decision of faculty.

Descriptive Data Analysis

The analysis showed that the four variables had means from 3.31 to 3.45, absolute value of skewness in all observed items are ranging from 0.21 to 0.51, which are far less than 3. (Kline 2011) The absolute values of kurtosis are ranging from 0.46 to 1.40, which are far less than 8. (Kline 2011) Therefore, all observed variables of faculty retention in this study are basically subject to a normal distribution.

Confirmatory Factor Analysis

The results of factor analysis showed that all the factor loadings were significant at the .01 level, ranging from .662 to .880. This suggested that all the variables were well measured by the indicators.

Confirmatory factor analysis of job satisfaction shows that factor loadings of the six factors are significant at the .05 level, ranging from .662 to .751. The results show that Colleague relationship and Professional Development have the largest factor loading of .751 and .715 respectively, indicating that these two dimensions have the greatest effect on degree of job satisfaction, which is in consistent with the finding of qualitative stage. Welfare Package and Work Itself have the same factor loading of .686, ranking the third of the 6 factors affecting job satisfaction of faculty members in four-year public higher education institutions in Guangxi China. Furthermore, the R^2 output ranges from .439 to .750, which illustrates that at least 43.9% amounts of variance are accounted for.

Confirmatory factor analysis of Organizational Commitment shows that factor loadings of the four factors are significant at the .05 level, ranging from .721 to .773. The results show that the four factors have almost the same effect on the degree of organizational commitment; while Value Commitment has a slightly large effect on organizational commitment. The R^2 output ranges from .536 to .774, which indicates that at least 53.6% amounts of variance are accounted for.

Confirmatory factor analysis of job embeddedness shows that factor loadings of the six factors are significant at the .05 level, ranging from .669 to .707. The results show that match to community has the greatest effect on the degree of job embeddedness, λ=.707. Link to Community and Sacrifice to Community follows with the second and third largest ones, with factor loading of .682 and .681 respectively. The R^2 output ranges from .457 to .774, which illustrates that at least 45.7% amounts of variance are accounted for.

The factor analysis of faculty retention shows that all the factor loadings are significant at the .01 level, ranging from .746 to .868. The R^2 output ranges from .439 to .750, which illustrates that at least 43.9% amounts of variance are accounted for.

Table 2 CFA Model Fit Indices of Variables

variables	χ^2	df	p	RMSEA	SRMR	CFI	TLI
JS	140.375	129	.233	.014	.025	.998	.997
OC	64.743	61	.3474	.012	.020	.999	.999
JE	171.903	164	.3205	.010	.025	.999	.999
FR	2.706	1.353	.2585	.028	.007	.999	.998

Note: JS=job satisfaction, OC=organizational commitment, JE=job embeddedness, FR=faculty retention

Path Analysis of the Full Model

After the overall CFA model was confirmed and accepted, bootstrap in Mplus 7.0 was employed to test the effects of all the three independent variables, namely job satisfaction, organizational commitment, and job embeddedness, on the dependent variable, faculty retention. The tested model showed good fit (χ^2 (164) = 172.639, p=.30, CFI = .997, RMSEA = .011, SRMR = .029). The three independent variables were confirmed to have direct positive effect on faculty retention with effects of .344, .274, and .345 respectively. The result also shows that the three variables could explain 54.6% of the variable of faculty retention (R^2=.546, p<.01). The following figure 1 shows the full model.

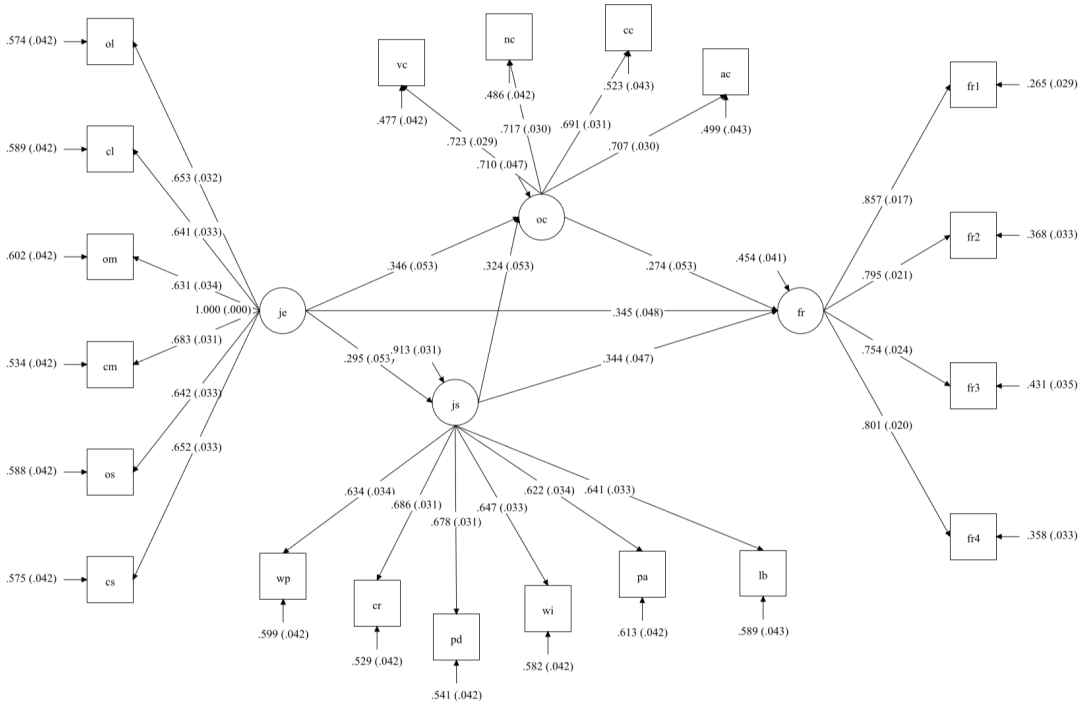

Figure 1 Structure Equation Model of Factors Affecting Faculty Retention

Notes: wp=welfare package, cr=colleague relationship, pd=professional development, wi=work itself, pa=professional autonomy, lb=leader behavior, ac=affective commitment, cc=continuous commitment, nc=normative commitment, vc=value commitment, ol=organizational link, cl=community link, om=organizational match, cm=community match, os=organizational sacrifice, cs=community sacrifice

After the model was tested, the total indirect effects through a mediator in the context of multiple mediators model were examined. Mediated paths were estimated using the Model Indirect command in MPlus 7.0. The results are shown in the following table 3.

Table 3 The Standardized Total, Direct and Indirect Effects of Variables

Variables	JS			OC			FR		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
JS	-	-	-	.324**		.324**	.344**	.089**	.433**
	-	-	-	(.056)		(.056)	(.050)	(.023)	(.046)
OC	-	-	-	-	-	-	.274**	-	.274**
	-	-	-	-	-	-	(.054)	-	(.054)
JE	.274**	-	.274**	.346**	.095**	.441**	.345**	.222**	.567**
	(.054)	-	(.054)	(.051)	(.023)	(.049)	(.047)	(.033)	(.039)
Model Fit Indices χ^2 = 172.639 df=164 p=.30 CFI = .997 RMSEA = .011 SRMR = .029									

Notes: ** is significant at the .01 level (2-tailed).

Statistics in bracket are standard error of estimates (SE)

Links that are not included in the model are indicated by "-".

Research Findings

First, this research found that the hypothesized structural equation model was in consistent with the empirical data.

The proposed model with faculty retention as the dependent variable and job satisfaction, organizational commitment, job embeddedness as the dependent variables were confirmed to be in consistent with the empirical data. Job satisfaction was measured by six factors, which are welfare package, colleague relationship, professional development, work itself, professional autonomy, and leader behavior. Organizational commitment was measured by four factors, which are affective commitment, continuance commitment, normative commitment, and value commitment as well. Job embeddedness was measured by six factors, including link to organization, link to community, match to organization, match to community, sacrifice to organization, and sacrifice to community. The overall model fit appears quite good. The χ^2 test yields a value of 172.64 (df=164), which has a corresponding p-value of .3066. This p-value is too high to reject the null of a good fit. Besides, the RMSEA is .011, SRMR is .029, sufficiently low to indicate acceptable fit. (Hu & Bentler 1999)

Second, job satisfaction, organizational commitment, and job embeddedness were proved to have positive direct effects on faculty retention in four-year public higher education institutions in Guangxi China with influence coefficient of .345, .344, and .274 respectively at the significant level of .01. Besides, job embeddedness and job satisfaction were also proved to have positive indirect effects on faculty retention with influence coefficient of .222 and .089 respectively at the significant level of .01. These results indicated that full-time teachers in four-year public

higher education institutions in Guangxi China were more likely to stay at the same colleges or universities if they were more satisfied with their job, had stronger commitment with their colleges or universities, or had stronger bond with their colleges or universities and the communities where they lived.

Third, this research also found that job embeddedness had stronger predictive power on faculty retention than job satisfaction and organizational commitment with a total influence coefficient of .567 at the significant level of .01.

Discussion of Research Results

This research studied the factors affecting faculty retention in four-year public higher education institutions in Guangxi China. The research results are to be discussed in the following 4 parts: job satisfaction, organizational commitment, job embeddedness, as well as faculty retention.

This research found that job satisfaction has a positive direct effect on faculty retention in four-year public higher education institutions in Guangxi China. In most studies, salary was listed as the top reason that teachers were satisfied with their job or not. However, this research indicates that teachers are less concerned with compensation than they are with particulars concerning the professional development, colleague relationship. In this research, colleague relationship and Professional Development have the largest factor loading of .751 and .715 respectively, indicating that these two dimensions have the greatest effect on degree of job satisfaction. Welfare Package and Work Itself have the same factor loading of .686, ranking the third of the 6 factors affecting job satisfaction of faculty members in four-year public higher education institutions in Guangxi China.

Job embeddedness has stronger predictive power on faculty retention than job satisfaction and organizational commitment.

The study of direct and indirect effect of job satisfaction, organizational commitment, and job embeddedness reveals that job embeddedness has stronger predictive power which is in consistent with the study of many scholars. Mitchell et al. (2001) believe that attitude variables have insufficient explanatory power for turnover in the traditional turnover model, and job embeddedness as a broader concept has greater predictive power. Tanova and Holtom (2008), based on data from European surveys, demonstrate the predictive role of traditional turnover models and job embeddedness models. The discovery suggested that job embeddedness is a good predictor of turnover even after controlling employee attitude variables and job opportunity variables. Crossley et al. (2007) found that job embeddedness can better predict employee turnover

Suggestions

Practical Implications

The findings of this study shed light on the practical implications to administrators in higher education institutions. It offers an alternate explanation to the reason why faculty members choose to stay in a college or university and provides practical suggestions to administrators trying to keep their faculty especially high qualified ones.

First and for most, administrators of colleges and universities must be aware of the importance of teacher retention and their responsibility in doing it. Second, administrators in colleges and universities should update their human resource management concepts and make faculty retention policy accordingly. As the results suggested that compared with traditional variables like job satisfaction and organizational commitment, job embeddedness has a greater effect on the stay intention of faculty members in four-year public higher education institutions in Guangxi China. Possible strategies and measures should be adopted to help increase the degree of both on the job and off the job embeddedness.

Third, the results of this research also suggest that although welfare package, including salary and other income a teacher get from his or her position, is an important aspect when a teacher considers a job, it is not as important as administrators believes. What a qualified teacher focus more on are collegial relationship and excellent professional development platform. Administrators in colleges and universities should try to provide teachers with a broad and relaxing academic platform.

Theoretical Implications

The current study offers several implications for faculty retention studies.

Some researchers argued that Chinese employees' community embeddedness does not predict the departure of employees (Wang et al. 2007). Some argued that community embeddedness tended to be homogenous due to residence registration system (Hom et al. 2009), and the community concept is not clearly defined in China (Zhang et al. 2012). However, the current study renders these speculations implausible. The results show that in China the community factors interact with organizational factors to determine whether a teacher wants to stay or leave. For future research, the influence of cultural factors and cross-cultural research should get the attention of researchers. Gelfand et al. (2002) suggested cross-cultural research as an important step in testing the generalization ability of the theory. Simply copying researches from Western cultural scenarios to other countries is not a method of generating universal knowledge. The specific national conditions and culture should be used as predictors to explore their impact on faculty retention.

Acknowledgement

I would like to express my deepest appreciation to Asst. Prof. Dr. Sukhum Prommuangkun and Asst. Prof. Dr. Pongthep Bunrueng, without whose support I would not have been able to accomplish this daunting task. Thank you for having taught me many lessons about scholarship, teaching, and service in and out of classroom.

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