

Model of competency development of professional group leaders (PGL) in higher vocational colleges in Fujian province

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Abstract: This study aims to take Chinese higher vocational colleges professional group leaders as the research subjects to analyze the components of their key competencies, develop the competency model of professional group leaders (PGL), and analyze the main factors influencing the model. It provides a powerful help for improving the scientific level of the construction and management of the teaching staff in higher vocational colleges and filling the gap in the research on the quality and ability of Chinese professional group leaders. A mixed research method is deployed in this study. Data are collected with the help of a self-administrated questionnaire and a semi-structured interview based on grounded theory. Data analysis involves structural equation modeling using AMOS, complemented by qualitative coding in NVivo. It concludes that the competency development model of professional group leaders comprises two main dimensions: explicit competencies and implicit competencies. Explicit competencies include cross-border adaptability (CBA), resource integration ability (RIA), innovation and development practice ability (IDPA), management leadership ability (MLA), and interdisciplinary scientific research ability (ISRA). Implicit competencies include personality attitude (PA), and intrinsic motivation (IM). The study fills a significant gap in the literature by providing a detailed model of competency for professional group leaders in the context of higher vocational education, offering a practical framework for improving the training and management of teaching staff and promoting the development of professional groups effective in vocational colleges.

Keywords: competency development; PGL; higher vocational colleges; grounded theory; SEM

1. Introduction

As an important part of higher education, higher vocational education has the characteristics of “advanced, professional, practical and open”. It carries the important responsibilities of cultivating diversified talents, inheriting technical skills, and promoting employment and entrepreneurship by Liu et al. (2021)

The construction level of teaching staff in higher vocational colleges, especially the competency of professional group teachers, is the key to realizing the purpose and service characteristics of higher vocational education. The Action Plan for the Innovative Development of Higher Vocational Education (2020–2023) emphasizes the construction of higher vocational teachers and puts forward clear requirements for high-quality, professional, and innovative teachers.

According to Liu et al. (2021), the professional group leader is the key to the growth of professional group instructors and the driving force behind the formation of high-level professional groups inside higher vocational institutions. The Ministry of Education and the Ministry of Finance (2021) share this opinion in their “Opinions on

Implementing High-level Vocational Schools and Professional Construction Plans with Chinese Characteristics,” which articulate the imperative to cultivate and attract leaders within professional groups possessing industry authority and international influence. In the realm of vocational college education quality development, the efficacy of professional group formation hinges on the presence of authoritative and influential professional group leaders. These leaders play a crucial role as exemplars, leading the professional development of teaching personnel in higher vocational institutions and acting as major drivers in furthering the growth of high-level professional groups.

To address the demands of industrial upgrading, the evolving characteristics of high-level cadres, and the development of cadre professional identity, educational institutions have been consistently engaged in the pursuit of talent capable of assuming leadership roles in cadre construction, aiming to cultivate and attract high-level cadres. However, this aspiration predominantly pertains to teacher development at a superficial level. Despite the growing recognition of the importance of professional group teachers, empirical research on their competencies remains limited. Li (2023) delineated the trajectory for developing highly qualified teams, initially introducing the notion of professional groups. However, without delving into comprehensive discourse. Similarly, Wang et al. (2024) expounded upon the connotation of professional group leaders, defining them as “leading talents” possessing exemplary academic accomplishments and standing within a specific knowledge domain within grassroots teaching organizations. These leaders are tasked with spearheading the development, integration, and strategic planning of their professional groups, as well as guiding teachers within these groups through personal influence and exceptional qualities, aligned with the field’s developmental vision. However, Yang et al. (2020) definition primarily centers on the responsibilities of professional group leaders rather than their competencies.

Consequently, this study investigates the competencies of professional group leaders and highlights the substantial practical and theoretical implications of this research. This research has the potential to position Chinese vocational colleges as leaders in the global cultivation of PGL. In discussions surrounding professional group development, the importance of PGL cannot be overstated, the framework proposed in this study has the potential to enhance the development and performance of higher vocational colleges.

1.1. Research questions

- 1) What is the level of competency development of PGL?
- 2) What are the components of competency development of PGL?

1.2. Research objectives

- 1) To study the level of competency development of PGL.
- 2) To analyze the components of competency development of PGL.

2. Literature review

2.1. Teacher competency

When investigating the competency and quality of professional group instructors, it is critical to first understand the competence and quality of teachers in general. International scholars generally contend that teacher competencies and quality encompass both developmental potential and comprehensive professional skills. Abd Majid et al. (2024) used a standardized questionnaire to investigate the skills of professional instructors. He identified leadership, cooperation, effectiveness, discipline, fundamental teaching skills, introspection, professional dedication, and the learning environment (Abd Majid et al., 2024; Ismailova et al., 2022). However, his examination was essentially macroscopic and lacked discipline-specificity. Li and Ding (2021) identified five characteristics of high-performing teachers: specialization, leadership, critical thinking, expectation setting, and interpersonal interactions, which were further divided into sixteen competencies. This approach has been a valuable resource in improving teachers' professional skills, particularly in rewarding performance-based compensation plans. Søvold et al. (2021) also proposed a teacher competency model with fifteen components, including communication skills, organizational aptitude, work standards, adaptability, interpersonal relationship building, collaboration, continuous learning, technical prowess, coaching, decision-making, learner-centeredness, quality orientation, information monitoring, innovation, and proactive action initiation. This approach provides useful insights into instructors' talents, but it does not include substantial studies on disciplinary and professional group formation.

Xu Jinping, widely considered a pioneer in research on teacher competencies and quality in China, has investigated the competence and quality of outstanding instructors in both primary and secondary schools. Xu (2004) used Behavioral Event Interview (BEI) technologies, psychometrics, and competence checklists to create a model. As a result, an increasing number of scholars have focused their attention on the abilities and quality of teachers in higher education institutions, using a variety of research methodologies and multidimensional approaches to investigate and discuss teacher characteristics, abilities, and assessment. Zhang et al. (2022) focused on teaching faculty competence in colleges and universities within Hebei Province, identifying three factors: professional aptitude, motivational capacity, and human development. Ismayilova and Klassen (2019) identified elements in the competency models of college teachers, including personality qualities, teaching attitudes, developmental characteristics, teaching and professional abilities, student involvement, and interpersonal communication. Yang (2022) identified four elements of college professors' competencies: charm, student-centered attention, instructional competency, and research acumen. Judge (2009) conducted competency modeling research centered on economic management instructors in Beijing's higher education institutions, proposing a nine-factor model incorporating personal traits, professional acumen, student care, responsibility, self-initiative, information gathering, interpersonal respect, leadership, management, and business support. Martin et al. (2021) employed BEI and a questionnaire to identify seven dimensions of competence among college instructors, including innovation, information acquisition, interpersonal acumen, responsibility, critical thinking, relationship cultivation, and goal orientation.

Research on teachers' abilities and quality, both domestically and internationally,

can be broadly categorized into two types: theoretical and empirical research. Theoretical research predominantly involves synthesizing a substantial body of literature and summarizing experiential knowledge to delineate the characteristics of teachers' abilities and quality. Some scholars also construct competency models by aggregating viewpoints from diverse stakeholder groups regarding the competencies deemed essential for an exemplary teacher. In contrast, empirical research relies on survey-based methodologies. This approach is gaining increasing recognition among scholars, with methods such as the analytic hierarchy process being used more frequently. Presently, research endeavors predominantly employ a combination of theoretical frameworks and empirical evidence, integrating various methodological approaches to investigate teachers' abilities and quality comprehensively.

2.2. Teacher competency in higher vocational colleges

The proficiency of instructors plays a pivotal role in facilitating Professional Group Leaders (PGLs) in acquiring scarce resources, encompassing knowledge, skills, and abilities. Leveraging these scarce skills, PGLs can attain a competitive edge. The learning competency of PGLs plays a pivotal role in enhancing the knowledge, abilities, and skills of their team members. Just like various countries have distinct natural resources, individuals possess distinct skills that contribute value not only to PGLs but also to the economy of higher vocational colleges.

Numerous researchers have extensively explored the competencies and qualities of teachers in higher vocational education. Hu (2019) analyzed the "Double-qualified teacher" concept in higher vocational colleges, utilizing the BEI method to extract 6 key elements: teamwork, research proficiency, developmental awareness, positive attitude, and teaching quality. Similarly, Li et al. (2024) focused on Fujian Information Vocational College, using BEI and questionnaires to identify 5 elements of teachers' abilities and quality: moral integrity, teaching competence, physical attributes, research attitude, and team cohesion. Liu (2019) through theoretical analysis supplemented by questionnaires and interviews, constructed teacher competency models in higher vocational colleges, encompassing teaching proficiency, qualifications including professional and practical literacy, personality attributes, and interpersonal management abilities. Mao and Zhang (2017) used open questionnaires and competency checklists to evaluate 169 professors, compiling a questionnaire on teacher competency specifically tailored to higher vocational education. Subsequently, Yijuan and Jinghuan (2020) employed EFA and SEM to validate the competency model within 7 Colleges in Fujian, involving a sample of 379 teachers.

2.3. Key competency theories

According to Kiremitci et al. (2023), the phrase "key competencies" was coined in Germany by occupational sociologists. Mertens, a German sociology scholar, was the first to establish the notion of "key competencies." This idea includes information, skills, and talents that are not directly related to certain occupations. It encompasses the ability to make educated judgments and decisions in a variety of settings and responsibilities, as well as the ability to adjust to unexpected life changes. Key competencies essentially include fundamental skills, aspects that promote job progress,

information acquisition and processing abilities, and elements that are relevant to the time. Following the 1980s, research on “key competencies” in German vocational education switched to a focus on “vocational action competencies.” According to Cheol Shin et al. (2013), vocational competencies include all aspects of key abilities, primarily including professional ability, methodological competence, occupational competence, social competence, and personality competence.

Following the institutionalization of the fundamental objective of “cultivating morally upright individuals” in vocational education, domestic scholars initially directed their focus toward student training. They subsequently embarked on research endeavors concerning “key competencies,” rooted in core competencies, to better address the fundamental inquiries regarding the types of individuals to be trained, how to conduct their training, and for whom. Downs et al. (2023) delineated three primary research paths: exploration of the essence of “disciplinary aptitude” grounded in “ability” theory, examination based on “disciplinary aptitude” to delineate the constituent elements of specific “disciplinary key abilities,” and research on “disciplinary key abilities” founded upon “ability” theory. This line of inquiry was later intended for the development of teacher cohorts. Arranz et al. (2022) posited that teachers’ crucial attributes include leadership, knowledge proficiency, learning acumen, professionalism, and contemporary relevance concerning knowledge and skill. In the context of cultivating key competencies among professional leaders, Bradley et al. (2021) advocated for the prioritization of “cultivating morally upright individuals” within China’s vocational education system. Initially concentrating on student training, domestic scholars sequentially embarked on research about “key competencies” grounded in core principles. Byrne (2024) devised a PGL competency model comprising 7 functional domains, including foresight in professional development, resource allocation, team dynamics, and strategic execution. Additionally, Jackson and Rowe (2022) suggested a professional leader competence model divided into five dimensions: professional expertise, leadership proficiency, and general aptitude, with seven functional domains that are congruent with those established by Zhao et al. (2012)

2.4. Grounded theory

Grounded Theory (GT) is a qualitative research methodology developed by sociologists Barney Glaser and Anselm L. Strauss in 1978. It aims to develop theories or conceptual frameworks from data collected during the research process. Grounded Theory is often used when researchers want to understand social phenomena and generate theories that are closely connected to the data they have collected by Lu et al. (2024).

The grounded theory method is adopted in this study to analyze and summarize the competency factors of professional group leaders in higher vocational colleges. This method is adopted not only because of its increasingly widespread influence in the field of social sciences but also because it insists on constructing theories from primary data by Wang et al. (2024). Here are three steps involved in grounded theory:

Open Coding:

In this step, you start the initial analysis of the data by coding (labeling) various

segments of the data with descriptive or interpretive labels. Each piece of data is broken down into smaller parts, and you assign codes to capture the meanings present in the data. This process helps in identifying patterns and concepts.

Axial Coding:

In this step, you begin to categorize and link codes to form a more coherent framework. You start to explore the relationships between categories and subcategories, aiming to understand how they connect more systematically.

Selective Coding:

In this step, you focus on identifying the core category or central theme that ties together the other categories. This core category represents the main concept or phenomenon that the grounded theory seeks to explain. The selective coding process involves delving deeper into the core category and its relationships with other categories.

Using grounded theory, Pacher et al. (2024) developed a “Coach-Like” specialty leader competence model. From a structural standpoint, this model is made up of five levels (identification, accomplishment motivation, personality, specialist construction knowledge and abilities, and specialty construction leadership conduct), as well as seven functional categories. These functional areas encompass competencies related to forecasting specialty development, developing specialty curricula and resources, ensuring teaching quality, leading scientific research and social service initiatives, cultivating specialty culture, and fostering specialty team development and strategy implementation.

3. Research methodology

3.1. Research tools

To objectively measure the concept of professional group leader capabilities, this study adopted the Professional Group Leader Competencies Questionnaire (PGLQ). The questionnaire is divided into two subscales: the ability of professional group leaders and the ability to influence the development of professional group leaders. By using this intersectional assessment process, it is easier to investigate what educators consider to be areas of competency.

In this paper, the decision to employ grounded theory stems from its burgeoning influence in the realm of social sciences. Furthermore, its commitment to theory construction grounded in primary data is noteworthy. With years of development and refinement, Grounded Theory has evolved into a comprehensive methodological system for theoretical construction, finding wide-ranging applications across various disciplines and yielding commendable results. It stands as a theoretical tool adept at effectively elucidating social phenomena, representing a bottom-up approach to theory building.

3.2. Data collection

In this paper, participants included professional leaders (PLs), vice-principals (VPs), directors of teaching and research (DOTRs), and famous teaching teachers (FTTs) from 60 provincially accredited higher vocational colleges in China. A non-

probability sampling technique was employed for qualitative data collection, using convenience sampling as a non-probabilistic sampling technique. According to Takona (2023), the sampling size for qualitative data is determined by saturation and can commonly range from 10 to 30 for interviews. This inquiry involved 24 structured interviews. Qualitative data analysis was facilitated using NVivo software version 20. Additionally, the query test was used to determine the main themes in the data. **Table 1** presents the demographic characteristics of the interviewees (n = 24), including 10 females and 14 males.

Table 1. Demographics.

	Frequency	Percent	Valid %	Cumulative %
Male	14	58.4%	58.4%	58.4%
Female	10	41.6%	41.6%	100%
Total	24	100%	100%	

Table 2 shows the respondent category statistics a. Among the 24 interviewees, 7 were FTTs, 3 were PLs, 6 were DOTRs and 8 were VPs.

Table 2. Respondent category statistics.

	Frequency	Percent	Valid %	Cumulative %
FTTs	7	29.1%	29.1%	29.1%
PLs	3	12.5%	12.5%	41.6%
DOTRs	6	25%	25%	66.6%
VPs	8	33.4%	33.4%	100%
Total	24	100%	100%	

Table 3. Quantitative demographics.

	Element	Sample	Percentage%	Cumulative%
Gender	Male	300	64.10	64.10
	Female	267	57.05	100
	Total	567	100	
Age	Under 25	37	6.53	6.53
	25–29	198	34.92	41.45
	30–39	192	33.86	75.31
	40–49	120	21.16	96.47
	Above 49	20	3.53	100
	Total	567	100	
PGL or not	Yes	500	88.18	88.18
	No	67	11.82	100
	Total	567	100	

Since this study is applied to Fujian province higher vocational colleges, a probability sampling technique is employed for quantitative data. As a result, researchers propose that probability sampling in quantitative data is appropriate when

there is a high degree of generalization by Sekaran (2005). In all, 1000 people made up the study's sample. Quantitative data collection was utilized to examine 567 questionnaires on average. **Table 3** shows the demographics for quantitative data.

3.3. Research method

The quantitative data was analyzed using SPSS version 22 and AMOS 22, with structural equation modeling (SEM) techniques used to assess the suggested model. Confirmatory factor analysis (CFA) was used to determine the internal reliability and validity of the data. The questionnaire for this study was derived from existing literature. Cronbach's alpha and composite reliability (CR) were used to measure reliability, and construct validity (CV) was tested using convergent and discriminant validity tests.

4. Results

4.1. Qualitative analysis

Figure 1 shows the results of the words count. Following the transcribing of interviews, the data was entered into the NVivo program. The coding procedure was then completed, allowing for theme analysis. Using this method, the most frequently used terms in the interviews were found.



Figure 1. Words count.

Table 4 presents the coding table generated from the three-level coding process, delineating the competency of PGL.

As shown in **Table 4**, through grounded theory and NVivo software analysis, there are 22 first-level codes, and then the first-level codes are processed, and 7 second-level codes are obtained, respectively cross-border adaptability, resource integration ability, innovation and development practice ability, management leadership ability, interdisciplinary scientific research ability. Implicit competencies

include personality attitude, and intrinsic motivation. Finally, the professional group leader is obtained based on the third-level coding. PGL competency include explicit competencies and implicit competencies.

Table 4. Coding of competency elements of PGL.

Selective Coding	Axial Coding	Open coding	Number of people mentioned	number of mentions
Explicit Competencies	Cross-border Adaptability (19/118)	Real-time assessment of the path of industrial growth.	14	29
		A thorough examination of the demand quality of talent supply.	12	24
		Establishing a pragmatic approach for constructing precise design professional groups.	11	31
	Resource Integration Ability (18/117)	Efficient resource allocation across many platforms for intra-campus collaboration.	17	40
		Collaborative establishment and sharing of resources among schools, government, industry, and enterprises.	15	32
		Maximizing the overall benefits of resource structural integration.	15	25
	Innovation and Development Practice Ability (19/116)	The research attempted to investigate the logical beginning place for technical knowledge development.	14	39
		The mechanism for developing technological knowledge has been internally restructured.	14	32
		Implementation mechanism for long-term technical knowledge growth.	13	30
	Management Leadership Ability (19/108)	Taking the initiative to promote cooperative growth among teachers.	17	41
		Progressive reinforcement of hierarchical empowerment in organizational management.	15	24
	Interdisciplinary Scientific Research Ability (19/117)	Professional ability	13	28
Instruct students		12	23	
Classroom teaching		10	30	
Teaching Reform		9	22	
Implicit Competencies	Personality Attitude (19/132)	Scientific research	9	14
		Responsibility	20	58
		Perseverance	13	31
		Good attitude	11	36
	Intrinsic Motivation (18/98)	Self-motivated	10	21
		Job responsibilities	17	77
		Achievement needs	11	12
		Target pursuit	7	12

Based on three-level coding induction, a hypothesis model for the competency of professional group leaders in higher vocational colleges has been formulated, as **Figure 2**.

Based on these justifications, the current study developed a theoretical framework (see **Figure 2**) and tested the following hypotheses:

- H1. EAQ has a significant and positive relationship with CM.
- H2. IAQ has a significant and positive relationship with CM.
- H3. MLA has a significant and positive relationship with CM.
- H4. RIA has a significant and positive relationship with CM.

- H5. ISRA has a significant and positive relationship with CM.
- H6. CBA has a significant and positive relationship with CM.
- H7. IDPA has a significant and positive relationship with CM.
- H8. IM has a significant and positive relationship with CM.
- H9. PA has a significant and positive relationship with CM.

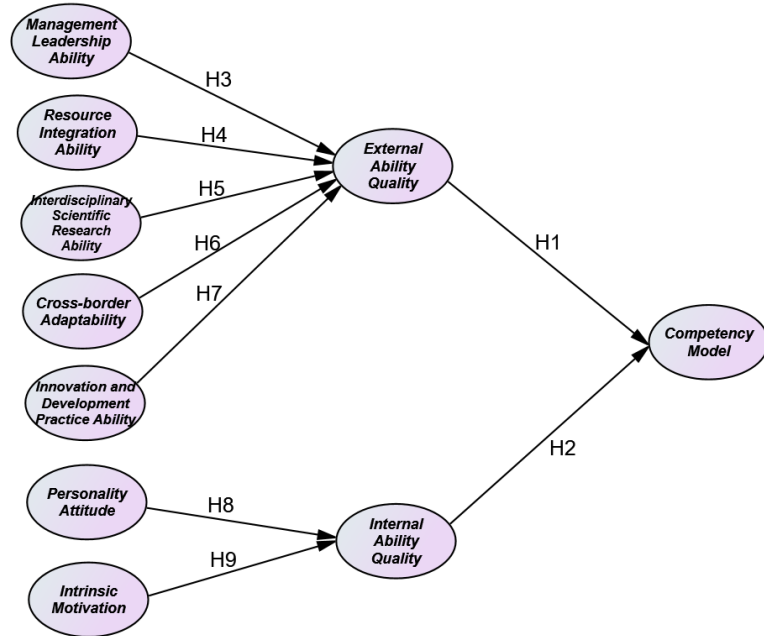


Figure 2. The hypothesis model of PGL.

4.2. Reliability and validity

To confirm the dependability of the research, the researchers used the index of category agreement. $CA = 2 \times (T_1 \cap T_2) / (T_1 \cup T_2)$ to assess the consistency. This was determined by calculating the percentage of identical material with identical coding and classification in the total number of codes. Illustrated below, where T_i ($i = 1, 2$) indicates the number of codes. $T_1 \cap T_2$ indicates the identical number of codes by two coders, and $T_1 \cup T_2$ represents the Total amount of codes created by two developers.

In this investigation, two researchers encoded the identical 6 texts on the competency of professional group leaders. The specific parameters were: $T_1 = 106$, $T_2 = 105$, $T_1 \cap T_2 = 88$, $T_1 \cup T_2 = 215$. Then $CA = 0.818$. Consequently, the results indicated a high level of category agreement in the text content analysis conducted in this study.

To assure study validity, the researchers used two methodologies. First, they used the original data inspection approach, which involves validating the original data at each level of coding. Second, they used expert consultation, soliciting the opinions and ideas of six vocational education experts in succession to ensure proper text interpretation and improve study reliability and validity.

4.3. Quantitative data analysis

Confirmatory factor analysis (CFA) requires reliability, convergent and discriminant validity, and other critical components. It would be useless to test a causal

model without sufficient validity and reliability. Several indicators, such as Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Average Shared Variance (ASV), are essential in determining validity and reliability.

The internal validity and reliability of each variable are shown in **Table 5**. Every variable has CR values greater than 0.7, and construct validity values are greater than 0.50. In a similar vein, all variables have MSV and ASV values that are more than 0.5, with ASV values being lower than MSV values. As so, it is clear that scale validity and reliability are unaffected.

Table 5. Reliability and validity.

Variable	Cronbach's α	AVE	MSV	CR	ASV
CBA	0.940	0.539	0.529	0.829	0.501
RIA	0.935	0.640	0.587	0.719	0.553
IDPA	0.934	0.772	0.745	0.768	0.679
MLA	0.935	0.801	0.701	0.816	0.647
ISRA	0.938	0.804	0.814	0.814	0.741
PA	0.933	0.663	0.572	0.754	0.529
IM	0.936	0.771	0.664	0.781	0.606

According to the questionnaire data and s structural equation modeling, the simulation results using AMOS software are shown in **Figure 3**.

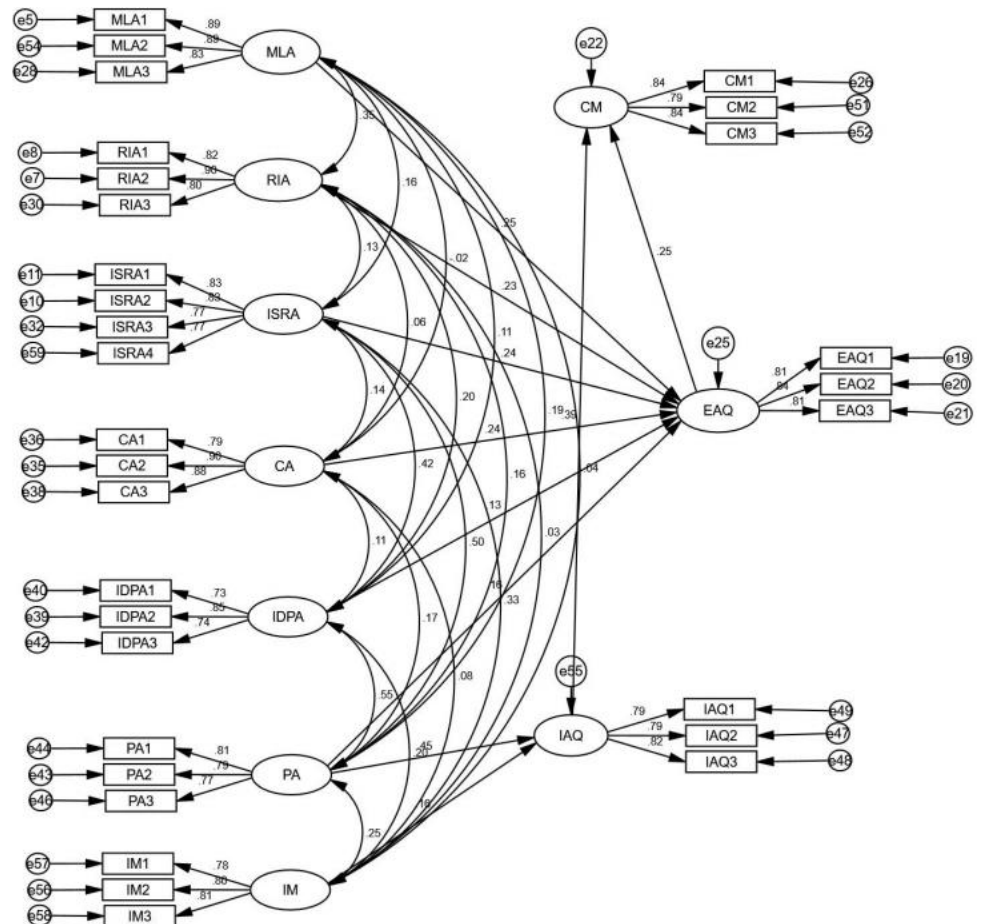


Figure 3. PGL model testing.

Figure 3 shows the structural equation model results, according to Hair (2009) $\chi^2/df = 2.415 < 3$, CFI = 0.957 > 0.95; GFI = 0.968 > 0.95; AGFI = 0.894 > 0.80; TLI = 0.964 > 0.90; SRMR = 0.03 < 0.09; RMSEA = 0.02 < 0.05; Reliability: CR > 0.7; convergent validity: AVE > 0.5; discriminant validity: MSA < AVE and ASV < AVE. In this study, the model is achieved.

The outcomes of testing hypotheses are displayed in **Table 6**. This study's hypotheses are all approved.

Table 6. Hypothesis.

			Estimate	S.E.	C.R.	P
CM	←	EAQ	0.268	0.040	6.700	***
CM	←	IAQ	0.157	0.037	4.243	***
CM	←	IM	0.462	0.052	8.885	***
CM	←	PA	0.124	0.034	3.647	***
CM	←	IDPA	0.105	0.033	3.182	***
CM	←	CA	0.156	0.025	6.240	***
CM	←	ISRA	0.175	0.026	6.731	***
CM	←	RIA	0.151	0.028	5.393	***
CM	←	MLA	0.154	0.025	6.160	***

5. Discussion

This paper marks the first attempt in China to investigate the competency of PGL, employing various research methods such as behavioral event interviews, grounded theory research, and questionnaire surveys, yielding significant progress.

The competency of PGL encompasses all competency and quality characteristic elements that define these leaders. This study employed the BEI method to interview 24 administrators and teachers in vocational colleges, holding provincial-level or similar honorary titles as professional group leaders. Through Grounded Theory research, 23 types of competency quality characteristics were coded and extracted from the interview data, forming the foundation for constructing the competency model of PGL.

Following McClellan's iceberg model theory, the competency models of professional group leaders in vocational colleges are classified into explicit and implicit competencies. Explicit abilities include cross-border adaptability (CBA), resource integration ability (RIA), innovation and development practice ability (IDPA), management leadership ability (MLA), and interdisciplinary scientific research ability (ISRA). Implicit competency encompasses personality attitude (PA) and intrinsic motivation (IM).

Subsequently, a survey questionnaire on the competency status of PGL in vocational colleges was developed based on the preliminary constructed competency model. A questionnaire survey was conducted on 556 samples of PGL in vocational colleges in Fujian province, focusing on seven dimensions: CBA, RIA, IDPA, MLA, ISRA, PA, and IM.

Through structural equation modeling (SEM) and reliability and validity analysis,

it was determined that the structure, reliability, and validity of the questionnaire were satisfactory, confirming the effectiveness of the competency model of PGL in vocational colleges.

The study presents several innovations: Firstly, it addresses the scarcity of literature on competency model research for professional group leaders in vocational colleges, focusing on both external and internal aspects of competency. Secondly, it integrates qualitative and quantitative research methods, ensuring the reliability and validity of the research findings.

The scientific development and administration of the teaching personnel in higher vocational colleges are advanced by this research, filling the research gap on the competence of professional group leaders. It also offers valuable insights to promote the high development of higher vocational education in China.

6. Limitations and recommendation

While this study has achieved its aims and objectives, it is important to acknowledge certain limitations that warrant discussion. The findings of this research are primarily applicable to Chinese higher vocational colleges due to the limited timeframe and resources, restricting data collection to China. As a result, future studies aiming to generalize the findings internationally and on a larger scale should involve participants from diverse geographical regions to broaden the research scope.

Furthermore, the implementation of the PGL model in higher vocational colleges is anticipated to improve one's understanding, aptitude, and performance of staff within these institutions. This initiative is expected to facilitate continuous learning among staff, enabling them to update their knowledge and ultimately deliver improved services. However, it is essential for future research to explore the effectiveness of this model in different cultural and institutional contexts to ensure its relevance and applicability across diverse educational settings.

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