Original Article

IEEPJ Vol. 5, No. 3, 2023, 289-297

http://ieepj.hormozgan.ac.ir/

Iranian Evolutionary and Educational Psychology Journal

IEEPJ

Examining the Competency Evaluation Model of Primary Education Principals: A Structural Equation Modeling Study

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Abstract: The present study aimed to examine the competency evaluation model of primary education managers. The current research is applied in terms of purpose and quantitative in terms of data collection which was carried out by structural equation modeling method. The research data was used through a researcher-made questionnaire. The statistical population included all the primary education principals of Lorestan province (Iran) in 2021, and 330 people were selected by cluster sampling method based on the Krejcie and Morgan table. To examine the model, structural equation modeling method was used in PLS software. The results indicated that the coefficient of determination (R^2) is equal to 0.99, which is higher than the value of 0.67, and according to the fit indices, the proposed model benefits from a good fit. Since the t values for all direct effects were higher than 1.96, all the relationships in the model were confirmed.

Keywords: Competency assessment model validity, principals, elementary schools, structural equations modeling

Introduction

The effectiveness and efficiency of the education system hinge upon the knowledge, expertise, ability, and skills of human resources, particularly managers who play a crucial role in its functioning (Nisar et al., 2021). The degree of competency and capability possessed by these managers directly impacts their effectiveness in promoting and achieving the goals set forth by the education system. In contemporary times, the pursuit of efficient and effective management in education presents a significant challenge, prompting the question of whether educational management is in sync with societal changes and the evolving needs of the population. Undoubtedly, schools stand as the cornerstone of the education landscape, and the attainment of successful and efficient schools becomes an unattainable and distant prospect without competent and capable managers (El Asame & Wakrim, 2018). Consequently, the enhancement of school performance across nations has emerged as a pressing concern, driven by the need to improve the quality of education provided (Valley et al., 2020).

When we examine the leading and successful countries in the world, specifically in the realm of education, and analyze the factors contributing to their success, we cannot overlook the pivotal role played by educational managers within their respective systems (Suhairom et al., 2014). Given the expansive and rapid advancements in science and technology, the anticipated functions of educational

Article information: Received: 2023/01/15 | Accepted: 2023/02/9 | Published: 2023/09/01. https://doi.org/10.52547/ieepj.5.3.289

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[DOR: 20.1001.1.25884395.2023.5.3.22.3]

[DOI: 10.22034/5.3.289]

institutions have undergone significant changes and transformations. These altered functions demand outcomes and benefits that differ from those of the past, aligning with new societal needs. Naturally, meeting these expectations necessitates the provision of ample resources and appropriate facilities, which has proven to be a formidable challenge due to economic conditions, declining government revenues, the emergence of complex needs, and the intricate balancing act of national and international priorities (Dostilio, 2017). Despite the commendable efforts exerted by managers and officials, the attainment of these requirements remains elusive.

Over the years, thinkers in the fields of management and economics of education, as well as senior managers and policymakers within various societies, have proposed and implemented numerous solutions to effectively confront these challenges. Among the operational solutions put forth are increasing the allocation of funds for education from the public budget, involving the private sector in the establishment and management of schools, engaging parents in school governance, minimizing unnecessary expenditures, implementing self-management practices, and delegating responsibilities to external organizations such as municipalities and companies. These solutions, among others, have been suggested and implemented as potential avenues to address the multifaceted challenges faced by the education system.

One of the novel approaches that has recently captured the attention of organizations pertains to the concept of competence and its strategies for promotion within the realm of human resources, particularly among managers (Getha-Taylor et al., 2013). In the context of competency, a variety of criteria such as commitment, expertise, skill, ability, experience, and compassion are utilized for the purposes of selection and promotion, with the ultimate aim of attaining organizational goals once they have been identified (Ford & Meyer, 2015).

Competence, originating from the field of human resources management, can be defined as a fusion of motivation, skill, knowledge, social role, and moral traits. However, due to differing opinions and, in certain cases, incomplete translations, the literature surrounding human resource management, particularly meritocracy, has become fragmented. Consequently, one of the key reasons for the lack of clarity regarding the concept of competence can be attributed to disparate definitions and the failure to distinguish between the two concepts of competence fields and people-related competences. Competence areas encompass the range of activities in which an individual possesses proficiency, whereas competencies related to people can be viewed as a collection of attributes that confer the capacity for competence within a specific domain (Sherman et al., 2007). Essentially, competence areas are typically job-centric, while competencies primarily revolve around individuals. Consequently, when assessing an individual's competence, some individuals prioritize job-specific technical skills. It can be

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[DOR: 20.1001.1.25884395.2023.5.3.22.3]
[DOI: 10.22034/5.3.289]

argued that factors such as knowledge and education, effective and strong communication, creativity, problem-solving and analytical abilities, rapid learning, and mental agility are deemed particular competency factors aligned with professional performance. It is evident that merely having competent individuals is insufficient for enhancing an organization, thereby necessitating the implementation of a merit-based management system (Alamdari et al., 2023).

In order to establish a suitable model for identifying competent managers within the primary education sector in Lorestan province, an extensive array of studies on the research background were conducted. The conducted studies predominantly focused on the competence of managers as a central phenomenon. In the research conducted by Khanifar et al. (2021) titled "Designing a competency model for educational managers for use in the evaluation and development center," a qualitative method was employed to explore the subject matter. The research encompassed experts and professors affiliated with education as the statistical population, with a total of 17 individuals participating through the snowball sampling method. The findings of the study revealed that the primary components of the competency model for education managers in the assessment center encompassed areas such as knowledge competency, executive competency, leadership and guidance competency, as well as communication competency. These components were found to be integral in evaluating and enhancing the performance of educational managers.

Garcia et al. (2018) in a study emphasized the significant role of model schools in the American school reform movement. Employing a qualitative approach, the researchers identified the best leadership practices from a sample school system, which were categorized into three main indicators and their respective sub-components. The first indicator pertained to academic focus, which included components such as the manager being equivalent to the educational leader, setting students' expectations, and making data-based decisions. The second indicator focused on employee tendencies, encompassing components such as the hiring strategy, autonomy in hiring personnel, and non-renewal of employees. Lastly, the third indicator revolved around the organizational level, involving aspects such as the perspective of senior managers and feedback, employee responsiveness and expectations, as well as the absence of school board policy.

Likewise, Thalib and Manda (2016) carried out a research study titled "Main Competencies and Skills of Principals and Supervisors in Schools" aimed at investigating the distinctive characteristics of leadership in new schools and the challenges faced by principals. The study identified 12 competencies that were closely associated with the role of principals. These competencies included school management, school law, educational leadership, resource management, leadership perspective, change leadership, communication, strategic planning, data management, social relations, different learning

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strategies, and cooperation. Each of these competencies played a crucial role in shaping the effectiveness and success of principals and supervisors in educational settings.

Akinola (2018) delved into a comprehensive exploration in their research article entitled "Managerial competencies of managers for sustainable human resource management in secondary education in Nigeria." The aim of their investigation was to shed light on the essential skills and knowledge required by school principals in Enugu state, Nigeria, in effectively managing human resources, particularly in the context of the learning process. In order to undertake this study, a statistical population comprising 291 school principals was considered, and a sample of 146 individuals was selected using the simple sampling method. The researchers adopted a descriptive research design to analyze the collected data and draw meaningful conclusions.

The results of the study indicate that secondary school principals in Enugu state lack the necessary management competencies, knowledge, and abilities essential for effectively overseeing human resources with respect to the learning process. Consequently, the researchers strongly recommend that education principals prioritize the significance of human resource management in their respective domains. These findings build upon the existing body of knowledge derived from previous studies and the competency models that have been examined in these research endeavors.

Taking inspiration from the aforementioned findings and the explored competency models, the present study endeavors to evaluate the competency evaluation model of primary education managers in Lorestan province, Iran. In order to achieve this objective, the researchers have employed the structural modeling equation (SEM) method to investigate the structural equations of the proposed model and subsequently discuss the findings in a comprehensive manner. By undertaking this research, the authors aim to contribute to the existing literature on the competencies required by primary education managers in Iran, thereby providing valuable insights and recommendations for enhancing the effectiveness of human resource management in the education sector.

Material and Methods

The research method employed in this study was of correlational nature, with the aim of investigating the competency model of primary school principals. To evaluate this model, the researchers utilized structural equation modeling in PLS software. The sample for this study consisted of 330 elementary school principals from Lorestan province, all of whom voluntarily participated by answering a questionnaire specifically designed for this research. Prior to completing the questionnaire, the participants were required to provide their informed consent by signing a consent form. For the purpose of data analysis, the researchers employed descriptive statistics methods, specifically mean and standard

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deviation calculations, as well as inferential statistics methods, such as path analysis. To carry out these analyses, two software programs were utilized: SPSS26 and Smart PLS version 3. The alpha error level, which determines the acceptable level of significance for hypothesis testing, was set at 0.05 ($p<0.05$), in line with the conventional statistical standards.

Results

Table 1 shows the mean and standard deviation of the competence components of primary school principals. The average range of the variables is from a minimum of 1 to a maximum of 5. The results showed that the highest average among the dimensions of managers' competences is intellectual and mental competences equal to 4.20, operational competences equal to 4.14 and the lowest mean for moral competences equals to 3.59. Examining the average of the components showed that the average of all the components was close to or higher than the value of 4, which indicated the high average of the components.

Table 1. Descriptive statistics of the competence components of primary school principals

Dimensions	Components	Mean	SD
Leadership competencies	Perceptual skill	3.98	0.91
	Management skills	4.05	0.88
	The total score of the dimension of leadership competencies	4.02	0.76
Intellectual and mental competence	Awareness skills	4.15	0.74
	Decision making and problem solving skills	4.25	1.10
	The total score of the dimension of intellectual and mental competence	4.20	0.87
Interpersonal competence	teamwork skills	4.09	0.84
	Social-communication skills	4.10	0.92
	Total score of interpersonal competence dimension	4.05	0.89
Operational competence	resource management	4.09	0.79
	Executive Management	4.11	0.87
	Knowledge skills	4.22	0.82
	Total score of operational competence dimension	4.14	0.92
Moral competence	Moral competence, moral characteristics	4.02	0.83
	Valuable features	3.17	0.84
	The total score of the moral competence dimension	3.59	0.92
Personality competence	Personality competence personality traits	3.88	1.10
	Professional Behavior	3.74	0.87
	Total score of personality competence dimension	3.81	0.88

In the current research, structural equation modeling methods, namely the partial least squares (PLS) method, have been used to test the measurement model and research hypotheses. PLS software is less

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dependent on the sample size, does not require normality of the data and focuses on maximizing the variance. Based on the obtained results, the coefficient of determination (R^2) is equal to 0.99, which is higher than the value of 0.67, so it can be confirmed that the structural model has a good fit. The endogenous structures of the research model are favorable and show that about 99% of the changes in the dependent variable in the model are explained by the total effects of the independent and dependent variables. Also, the predictability of the model can be measured using the non-parametric test of Stone Geisser (1974). Q^2 in this case was calculated equal to 0.967, which is a strong value. The goodness of fit index (GOF) was 0.65. This value for GOF indicates a strong general fit of the model, therefore, there is a very good agreement between the data and the research model.

After examining the fit of the direct relationship model in the proposed model, it was examined. The results are presented in Table 2. Based on the results obtained from the structural equation model, the value of t for all direct effects in all hypotheses is higher than 1.96, so it can be said with 95% confidence that all relationships in the model have been confirmed.

Table 2. Test of direct coefficients of the structural model and path analysis

Path	Path type	Path coefficient	T value	p
Ethical competence -> competency managers	Direct	0.244	27.03	0.001
Interpersonal competence -> competency managers	Direct	0.340	18.004	0.001
Leadership competency -> competency managers	Direct	0.256	26.11	0.001
Personality competence -> competency managers	Direct	0.244	27.03	0.001
Operational competence -> competency managers	Direct	0.288	23.32	0.001
Intellectual and mental competence -> competency managers	Direct	0.302	28.02	0.001

Discussion

Our study delves deep into the assessment of competency models for managers in the field of primary education, with a specific focus on the province of Lorestan in Iran. By employing a quantitative approach and utilizing the structural equation modeling (SEM) method, the research aims to thoroughly examine the relationships and factors that contribute to the competency evaluation of principals in the realm of primary education. The obtained results are in line with previous studies (Akinola, 2018; Alamdari et al., 2023; Bender et al., 2015; Khanifar et al., 2021; Kou et al., 2013; Salleh & Sulaiman, 2015; Thalib & Manda, 2016).

The quantitative nature of this study is clearly evidenced through the utilization of a researcher-developed questionnaire, as well as the selection of a sample size consisting of 330 primary education principals from Lorestan province, which was chosen through the method of cluster sampling. To analyze the data, the researchers employed SEM in the PLS software, which ultimately revealed a

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remarkably high coefficient of determination (R2) at 0.99. This significant finding suggests that the proposed competency evaluation model accounts for a substantial portion of the variance in the data, thus indicating a robust fit.

The study places a strong emphasis on the use of structural equation modeling in order to provide a comprehensive understanding of the relationships between the various variables within the proposed model. The results obtained from this analysis demonstrate a notable goodness of fit, as evidenced by the fit indices. Of particular importance is the fact that all of the t-values associated with the direct effects within the model exceed the critical value of 1.96, thus confirming the statistical significance of the relationships under investigation.

This research makes a valuable contribution to the academic discourse surrounding the management of primary education by providing empirical insights into the evaluation of principals' competencies. The robustness of the structural equation model, coupled with its high explanatory power, serves to underscore the potential applicability and relevance of the proposed competency evaluation framework. Policymakers and stakeholders within the field of education can draw upon these findings in order to inform their decision-making processes and enhance the mechanisms used for assessing the competencies of primary education principals. Furthermore, it is suggested that future studies could investigate the generalizability of these findings to other regions and educational contexts, thereby fostering a broader understanding of effective competency evaluation models for educational leadership.

Conflict of interest: The authors have no conflicts of interest relevant to the content of this article.

Financial sources: This research has received no financial support from any organization.

Acknowledgment: The authors would like to express their gratitude to all the participants and esteemed education officials who helped them in the research process.

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