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Exploring the Evaluation Framework of Influence without Authority for Kindergarten Principals through the Lens of Managerial Psychology: A Study Utilizing the Delphi Method, Analytic Hierarchy Process, and Computer-Based Analysis

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Abstract

This study aims to establish a comprehensive evaluation system for assessing the influence without authority of kindergarten principals from a managerial psychology perspective. This framework serves as a scientific foundation for fostering and enhancing the managerial influence of kindergarten administrators. Through methods such as literature review and interviews, initial indicators for evaluating the influence without authority of principals were identified. The Delphi method was employed to consult 15 experts from psychology, education, management, and related fields, followed by the application of the Analytic Hierarchy Process to determine indicator weights. Following two rounds of expert consultations, a structured framework emerged, comprising four first-level dimensions, eight second-level dimensions, and fourteen third-level dimensions that define the influence without authority of kindergarten principals. The index weights determined through computer analysis have all passed the consistency test. The indicator system derived through computer algorithms can be used to objectively and scientifically evaluate the non-power influence of kindergarten principals, providing a scientific basis for the study of the psychology and behavior of kindergarten administrators, as well as for the cultivation and training of their leadership skills.

Keywords: Kindergarten principals, influence without authority, evaluation indicators, Delphi method, analytic hierarchy process, computer-based analysis

1. Introduction

Amidst ongoing societal progress and the deepening reforms in early childhood education, the leadership and influence wielded by kindergarten principals have progressively emerged as central themes within the educational realm. Viewed through the lens of managerial psychology, leadership transcends mere traditional authoritative control, with influence without authority now assuming a paramount position. As the vanguards of kindergartens, principals shoulder not only the responsibility for overseeing the day-to-day operations of the institution but also the crucial task of harnessing influence without authority effectively. This serves to propel the holistic growth of children, enabling them to thrive while also catering to the needs of children, their guardians, and the dedicated staff within the kindergarten environment [1].

Managerial psychology delineates the influence without authority of leaders into four dimensions: character, competence, knowledge, and emotion [2]. Character embodies the moral standing of a leader, serving as the cornerstone for establishing their credibility. A principal of noble character can bolster their influence by meeting the psychological need for respect within their team, thereby enhancing their impact. Knowledge, particularly

professional expertise, forms the foundation for a principal's competency in their role, also paving the way for self-actualization among team members. Competence, especially in leadership and educational management, stands as the linchpin for propelling a principal's team forward. When team members witness the astuteness in a principal's leadership, admiration naturally ensues, fostering greater trust and followership. Emotion, on the other hand, forms an emotional bond between the principal and subordinates, enhancing team cohesion and boosting operational efficiency [3].

In recent years, scholars and practitioners in the field of early childhood education have increasingly turned their attention towards the influence without authority of principals, viewing it as a key element in optimizing the educational environment and enhancing educational quality [4]. Although the importance of kindergarten principals' non-power influence has been widely recognized in academia, scientifically quantifying and evaluating this influence remains a challenge. Therefore, from the perspective of managerial psychology, this study aims to construct a comprehensive evaluation index system for kindergarten principals' non-power influence, considering character, ability, knowledge, and emotion, through the Delphi method, analytic hierarchy process, and computer-based analysis. This system not only helps to more comprehensively assess principals' leadership but also provides scientific guidance for their professional growth and the improvement of kindergarten management.

2. Research Methodology and Procedures

2.1 Research methodology

The Delphi expert consultation method is an approach that involves consulting a specially selected group of experts anonymously through face-to-face or email surveys. The key to this method lies in the selection of expert group members, who need to possess a broad knowledge and experience in the relevant subject, combining qualitative and quantitative research methods to enhance the scientific rigor of the study [5]. Researchers initially design the consultation questionnaire and engage experts in multiple rounds of consultations until a consensus is reached. The first-level processes of this study are outlined as follows:

2.1.1 Questionnaire formation

Through literature reviews, semi-structured interviews, and group discussions, the preliminary assessment indicator system for the influence without authority of kindergarten principals was developed [6].

2.1.2 Structure of the consultation questionnaire

The consultation form for evaluating the influence without authority of kindergarten principals consists of three parts: research background and significance, instructions for completion, and the main scale text. The importance levels of the scale indicators were assigned using the Likert 5-point scale. Experts were required to evaluate and score each item based on their practical knowledge and understanding while also providing feedback in a comment section for potential revisions or deletions.

2.1.3 Principles of modification

Key principles include: a) retaining items with a selection rate of 80% and above rated ≥4 points, as well as retaining items with a 5-point selection rate exceeding 50%; b) incorporating additional items suggested by experts in the second round of the consultation questionnaire; c) addressing and incorporating modifications proposed by experts.

2.1.4 Consultation participants

Fifteen experts from relevant fields were selected for the consultation, all of whom participated in two rounds of expert consultations. Among the participating experts, there were 10 females, representing 66.67% of the total, and 5 males, comprising 33.33%. Their ages ranged predominantly from 31 to 50 years. Regarding educational qualifications, 33.33% held a doctoral degree (5 individuals), 46.67% held a master's degree (7 individuals), 13.33% held a bachelor's degree (2 individuals), and 6.67% held an associate degree (1 individual). Two experts had more than 10 years of work experience, while the majority had experience exceeding 10 years. The professional titles were mainly at the associate professor level or higher, with expertise in psychology and management (13.33%), early childhood education (33.33%), and other educational fields (40%), as presented in Table 1.

Table 1 Basic information of experts

Items	Options	Number of people	Percentage
Gender	Female	10	66.67
	Male	5	33.33
Age	31~40	7	46.67
	41~50	5	33.33
	51~60	3	20.00
Level of education	Associate Degree	1	6.67
	Doctoral Degree	5	33.33
	Bachelor's Degree	2	13.33
	Master's Degree	7	46.67
Titles	Associate Professor	11	73.33
	Full Professor	4	26.67
Area of expertise	Early Childhood Education	5	33.33
	Psychology	2	13.33
	Education	6	40.00
	Management	2	13.33
Work seniority	10 years and below	2	13.33
	11-20 years	6	40.00
	21-30 years	7	46.67

2.2 Research procedures

2.2.1 Establishment of consultation questionnaire structure

Building upon preliminary literature studies, semi-structured interviews, and group discussions, the fundamental framework for assessing the influence without authority of kindergarten principals was initially outlined, leading to the design of the consultation questionnaire. The questionnaire for evaluating the influence without authority of kindergarten principals consists of three parts: research background and significance, instructions for completion, and the main scale text. The significance levels of the scale indicators were assigned using the Likert 5-point scale. Experts were required to evaluate and score each indicator based on their practical knowledge and understanding, with an additional section for collecting expert feedback, allowing experts to propose modifications or deletions to the indicators [7].

2.2.2 Execution of expert consultation

The questionnaire was distributed to experts in face-to-face sessions or via email. Upon the retrieval of completed questionnaires, data analysis was conducted to refine the questionnaire items. The principles of modification primarily entailed: (1) removing items with importance scores ≥4 but with an expert cumulative selection rate below 80% and a 5-point selection rate below 50%; (2) incorporating modifications based on expert feedback and integrating expert-suggested revisions. Subsequently, the revised questionnaire was redistributed in a second round to finalize the questionnaire [8].

2.2.3 Statistical methods

Thorough statistical analysis of the collected survey data was performed using Excel 2010 and SPSS 22.0 software. Various statistical parameters for each indicator were computed, including means, standard deviations, and coefficients of variation, to comprehensively depict the data distribution. Special attention was given to several key coefficients related to expert opinions, such as expert consensus coefficient, authority coefficient, familiarity coefficient, and expert enthusiasm coefficient. The expert enthusiasm coefficient was used to gauge expert participation levels and enthusiasm based on the questionnaire response rate. Expert authority was evaluated by considering the familiarity with indicators and the rationale behind their judgments. Additionally, Kendall's concordance coefficient and coefficient of variation were utilized to reveal the level of consensus among expert opinions, aiding in understanding the degree of agreement among experts on various indicators. The average importance ratings and standard deviations were computed to quantify the concentration of expert opinions, followed by the utilization of the analytic hierarchy process for statistical purposes to ensure the scientific validity

and rationality of weight distribution.

3. Results and Discussion

3.1 Results

3.1.1 Expert enthusiasm coefficient (Cj)

The expert enthusiasm coefficient refers to the degree of interest that experts have in the research project. The researcher regards the questionnaire response rate as a direct indicator of the enthusiasm coefficient; the higher the response rate, the greater the overall enthusiasm, attention, and cooperation of the experts towards the research topic [9]. A questionnaire response rate exceeding 50% indicates a considerable level of expert enthusiasm [10]. In this study, through two rounds of consultations with experts, the questionnaires achieved a 100% response rate, indicating a remarkably high level of enthusiasm among the experts participating in this research, as shown in Table 2.

Table 2 Expert enthusiasm coefficient

Project/Event	Number of Experts	Number of Questionnaires Collected	Questionnaire Return Rate
Round I	15	15	100%
Round II	15	15	100%

3.1.2 Expert authority coefficient (Cw)

The expert authority coefficient (Cw) primarily reflects the self-assessment that experts make based on their understanding of the research content. The general criteria for assessment include the judgment coefficient (Cp) and familiarity coefficient (Cs), with the arithmetic mean calculated as $C_w = \frac{C_p + C_s}{2}$ [9].

The specific assignment method for Cs is detailed in Table 3, where Cs is typically divided into five levels.

Table 3 Familiarity coefficient assignment

Level of Familiarity	Very Familiar	Familiar	Moderately Familiar	Not Very Familiar	Not Familiar at All
Cs	1.0	0.8	0.6	0.4	0.2

The judgment coefficient (Cp) of experts is the basis for experts to make accurate judgments on the content of the consultation, primarily measured based on four aspects: theoretical knowledge, practical experience, understanding of external information, and the expert's own intuitive judgment [9]. The specific assignment method is detailed in Table 4.

Table 4 Assignment method for expert judgment coefficient

Basis of Judgment	Extent of Influence by Expert Judgment		
	Significant	Moderate	Minor
Practical Experience	0.45	0.35	0.20
Theoretical Analysis	0.30	0.20	0.10
Understanding of Domestic and International Data	0.20	0.15	0.10
Intuitive Assessment	0.05	0.05	0.05
Total	1.00	0.75	0.45

The expert authority coefficient (Cw), obtained based on the judgment coefficient and familiarity coefficient, is presented in Table 5. An expert authority level of $C_w \geq 0.70$ is considered the standard. In this study, the average value of C_p is 0.933, C_s averages 0.973, and the average value of C_w is 0.953. Individual expert C_w values range from 0.825 to 1, indicating a high level of expertise among the selected experts in this study. Refer to Table 5 for specific details.

3.1.3 Concentration degree of expert opinions

The concentration degree of expert opinions, as indicated by the standard deviation, coefficient of variation, and mean, are commonly used metrics to assess the concentration of expert opinions. A larger mean, smaller standard deviation, and lower coefficient of variation suggest a higher concentration of expert opinions [10]. The results of

expert consultations for two rounds are presented in Table 6 and Table 7.

Table 5 Expert authority coefficient

Expert ID	Judgment Coefficient Cp	Familiarity Coefficient Cs	Authority Coefficient Cw
1	1	1	1
2	0.85	0.8	0.825
3	1	1	1
4	0.85	1	0.925
5	0.85	1	0.925
6	0.9	1	0.95
7	1	1	1
8	1	1	1
9	0.9	0.8	0.85
10	0.9	1	0.95
11	1	1	1
12	1	1	1
13	1	1	1
14	0.95	1	0.975
15	0.8	1	0.9
Average Value Mean	0.933	0.973	0.953

Table 6 Statistical results of concentration degree of expert opinions in the first round

Dimensions:	Mean	Standard deviation	Coefficient of variation
A - Character	4	0.632	0.158
B - Competence	4.267	0.573	0.134
C - Knowledge	4.333	0.596	0.137
D - Emotion	4.867	0.340	0.07
A1 – Quality	4.133	0.618	0.150
A2 - Cultivation	4.733	0.442	0.093
B1 - Interpersonal Skills	3.933	0.573	0.146
B2 - Organization and Management	4.6	0.470	0.11
C1 - Professional Knowledge	3.733	0.573	0.154
C2 - Expanded Knowledge	4.4	0.712	0.162
D1 - Human-Centric Philosophy	3.533	0.618	0.175
D2 - Harmony and Coordination	4	0.516	0.129
A1-1 - Integrity	5	0	0
A1-2 - Honesty	5	0	0
A1-3 - Justice	5	0	0
A2-1 - Love and Dedication	4.933	0.249	0.051
A2-2 - Respect	4.867	0.340	0.070
B1-1 - Communication Skills	4.2	0.748	0.178
B1-2 - Collaboration Skills	3.533	0.718	0.203
B2-1 - Planning and Coordination Skills	4.533	0.618	0.136
B2-2 - Decision-making and Action	3.733	0.680	0.182
C1-1 - Educational and Teaching Proficiency	5	0	0
C2-1 - Broad Knowledge	5	0	0
D1-1 - Employee Empathy	5	0	0
D2-1 - Empathy	4.4	0.611	0.139
D2-2 – Cohesion and Unity	3.733	0.771	0.207

Using a criterion where the mean of the importance rating is greater than 3.5 and the coefficient of variation is less than 25% as the filtering standard for dimensions, the results from Tables 5-6 indicate that the mean importance ratings for the first-level dimensions, second-level dimensions, and third-level dimensions fall within the ranges of 4 to 4.867, 3.533 to 4.733, and 3.533 to 5, respectively. Additionally, the coefficient of variation for

the first-level dimensions, second-level dimensions, and third-level dimensions lie within the ranges of 0.07 to 0.158, 0.093 to 0.175, and 0 to 0.207, respectively. This suggests a high level of consensus among experts on the first, second, and third-level dimensions.

However, during the expert questionnaire phase, some experts suggested modifications. For the second-level dimensions, experts noted that "A1 Quality" and "A2 Cultivation" had little differentiation and some redundancy. In order to better highlight the leadership qualities of the principals, after consulting literature and discussing with experts, the terms were revised to "A1 Personal Cultivation" and "A2 Professional Ethics". Regarding the third-level dimensions, adjustments were made in response to the modifications at the second level. Furthermore, experts provided suggestions for interpreting the dimensions' meanings, leading to modifications after discussions.

Table 7 Statistical results of concentration degree of expert opinions in the second round

Dimensions:	Mean	Standard deviation	Coefficient of variation
A - Character	4	0.730	0.183
B – Competence	4.467	0.618	0.138
C - Knowledge	4	0.730	0.183
D - Emotion	5	0	0
A1 – Personal Cultivation	5	0	0
A2 – Professional Ethnic	4.2	0.653	0.156
B1 - Interpersonal Skills	3.933	0.442	0.112
B2 - Organization and Management	4.6	0.490	0.106
C1 - Professional Knowledge	4.467	0.718	0.161
C2 - Expanded Knowledge	4.6	0.490	0.106
D1 - Human-Centric Philosophy	3.533	0.618	0.175
D2 - Harmony and Coordination	4.2	0.653	0.156
A1-1 - Integrity	5	0	0
A1-2 - Honesty	5	0	0
A1-3 - Justice	5	0	0
A1-4 - Respect	4.867	0.340	0.070
A2-1 - Love and Dedication	4.933	0.250	0.050
B1-1 - Communication Skills	4.067	0.929	0.228
B1-2 - Collaboration Skills	3.533	0.718	0.203
B2-1 - Planning and Coordination Skills	4.6	0.611	0.133
B2-2 - Decision-making and Action	3.867	0.806	0.208
C1-1 - Educational and Teaching Proficiency	5	0	0
C2-1 - Broad Knowledge	5	0	0
D1-1 - Employee Empathy	5	0	0
D2-1 - Empathy	4.4	0.611	0.139
D2-2 – Cohesion and Unity	4.2	0.653	0.156

In the second round of expert consultations, the average importance ratings for each item have shown a general increase compared to the first round. The coefficient of variation is consistently less than 0.25, indicating a high level of consensus among experts.

3.1.4 Degree of expert opinion concordance

The degree of expert opinion concordance was represented using Kendall′W concordance coefficient. A higher value of W implies a greater level of expert concordance. The reliability of the research results was determined by whether the significance test P-value is less than 0.05. The specific W coefficients and significance test results can be found in Table 8. The results indicate a good level of concordance among expert opinions, with a significant improvement in the concordance coefficient between the modified second round and the first round of expert consultations (details in Table 8), with a P-value less than 0.05. This signifies strong expert concordance and the effectiveness of the consultations.

3.1.5 The weights and consistency test of influence without authority dimensions of kindergarten principals

The decision matrix for the first-level dimensions is shown in Table 9: By calculation, the weight values for the evaluation factors of character, competence, knowledge, and emotion are 0.408, 0.310, 0.179, and 0.103 respectively. Furthermore, through the computation of the maximum eigenvalue and eigenvector and subsequent consistency test, it is evident that the target-layer matrix has passed the consistency test (CR=0.0269<0.1), as detailed in Table 9. For each first-level dimension corresponding to the second-level indicators of character, competence, knowledge, and emotion, each first-level dimension maps to two second-level dimensions. According to Analytic Hierarchy Process theory, consistency tests are unnecessary at this level.

Table 8 Concordance coefficients and significance test results of expert consultations in the first and second rounds

		The First Round				The Second Round			
	Number of dimensions	Coefficient of concordance	Chi-square	degree of freedom	Degrees of freedom P	Coefficient of concordance	Chi-square	degree of freedom	Degrees of freedom P
First level	4	0.29	13.051	3	0.005	0.425	19.108	3	0.000
Second level	8	0.334	37.142	7	0.000	0.471	49.456	7	0.000
Third level	14	0.625	121.914	13	0.000	0.663	129.335	13	0.000

Table 9 Decision matrix and consistency test results for first-level dimensions

First-level Dimensions	Character	Competence	Knowledge	Emotion
Character	1.000	1.845	2.243	3.176
Competence	0.542	1.000	2.202	2.933
Knowledge	0.446	0.454	1.000	2.267
Emotion	0.315	0.341	0.441	1.000
CI=0.0239; RI=0.89; CR=0.0269<0.1				

The decision matrix for the third-level dimensions corresponding to personal cultivation is presented in Table 10. The weight values for each evaluation factor are 0.538, 0.277, 0.110, and 0.075 respectively. Additionally, through the computation of the maximum eigenvalue and eigenvector, followed by the consistency test, it is confirmed that the decision matrix has passed the consistency test (CR=0.0268<0.1), as detailed in Table 10.

Table 10 Decision matrix for personal cultivation corresponding to third-level dimensions

Third-level Dimensions	Fairness	Respect	Integrity	Honesty
Fairness	1.000	2.700	4.600	6.467
Respect	0.370	1.000	2.733	4.267
Integrity	0.217	0.366	1.000	2.533
Honesty	0.155	0.234	0.395	1.000
CI=0.02385;RI=0.89;CR=0.0268<0.1				

The number of indicators corresponding to other dimensions is three or fewer, therefore, no consistency test was conducted. The final weights for all dimensions are provided in Table 11:

3.2 Discussion

3.2.1 First-level dimensions

According to the data provided, character holds a significant weight of 0.408 in the influence without authority of kindergarten principals, ranking at the top among all dimensions. This data further confirms the pivotal role of character in leadership. For kindergarten principals, character is not only about personal moral cultivation but also the source of influence and cohesion displayed in managing and leading teams. A principled, fair, and responsible

principal naturally becomes a role model for the staff and children, with the strength of character deeply affecting and influencing everyone in the institution.

Competence, as a crucial factor following character, carries a weight of 0.310, underscoring its key role in the leadership of principals. In the unique context of a kindergarten as an organization, the competence of the principal directly impacts the operational efficiency and management level of the entire institution. Principals not only need outstanding decision-making and organizational coordination skills to ensure the smooth operation of the institution but also require exceptional communication skills to establish good interactive relationships with staff, parents, and children.

Table 11 Third-level dimension weights

First-level Dimensions	Weights	Second-level Dimensions	Weights	Total Second-level Weights	Third-level Dimensions	Weights	Total Third-level Weights
Character	0.408	Personal Cultivation	0.654	0.290	Equity	0.538	0.146
					Respect	0.277	0.073
					Integrity	0.110	0.040
					Honesty	0.075	0.020
		Professional Ethics	0.346	0.128	Love and Dedication	1.000	0.128
Competence	0.310	Interpersonal Skills	0.662	0.195	Communication Skills	0.689	0.136
					Collaborative Abilities	0.311	0.060
		Organizational and Managerial Abilities	0.338	0.100	Planning and Coordinating Skills	0.653	0.080
					Decision-making and Action	0.347	0.030
Knowledge	0.179	Professional Knowledge	0.622	0.109	Educational and Teaching Proficiency	1.000	0.122
		Expanded Knowledge	0.378	0.071	Broad Knowledge	1.000	0.063
Emotion	0.103	Human-centric Philosophy	0.710	0.082	Employee Empathy	1.000	0.082
		Harmony and Coordination	0.290	0.025	Empathy	0.654	0.012
					Cohesion and Unity	0.346	0.008

Knowledge, as an essential component of leadership qualities, holds a weight of 0.179, reflecting its foundational role in the leadership of principals. A knowledgeable principal not only provides children with more professional and in-depth educational guidance but also establishes a professional image among the staff, earning their respect and trust. Particularly in the rapidly evolving educational landscape, principals need to continuously update their knowledge base to align with new educational philosophies and methods.

Although emotions carry a relatively lower weight of 0.103 in the evaluation of leadership qualities, in an environment like a kindergarten filled with warmth and love, the role of emotions should not be underestimated. A caring and approachable principal often finds it easier to establish deep emotional connections with staff and children, thereby fostering their sense of belonging and loyalty. This emotional connection and identification significantly enhance the influence and leadership of the principal.

In conclusion, character, competence, knowledge, and emotions collectively form the core elements of influence without authority for kindergarten principals. Among these, character and competence serve as key indicators in evaluating whether a principal is outstanding, while knowledge and emotions are indispensable pillars of leadership for principals. An exceptional principal is inevitably someone of exemplary character, outstanding competence, profound knowledge, and abundant compassion.

3.2.2 Second-level dimensions

Personal cultivation holds a substantial weight of 0.654 in the influence without authority of kindergarten principals, signifying the paramount importance of a principal's personal qualities, moral upbringing, and behavioral habits in their influence. A principal with high personal cultivation not only sets an example for children

and staff but also fosters a healthy and positive atmosphere within the kindergarten.

Professional ethics, with a weight of 0.346, while relatively lower in weight, remains a crucial component of a principal's influence without authority. This includes the principal's educational philosophy, passion, and dedication to the early childhood education industry, directly impacting the principal's performance at work and their guiding role for staff and children.

Interpersonal communication skills, with a weight of 0.662, hold a significant position in the influence without authority of kindergarten principals. Principals need to engage in effective communication with staff, parents, and children to build positive interpersonal relationships. This ability enhances team cohesion, boosts staff morale, and promotes the overall development of the kindergarten.

Organization and management skills, with a weight of 0.338, although slightly lower in weight, remain indispensable for principals. Excellent kindergarten management skills include resource allocation, curriculum planning, and staff training, all key factors in ensuring the efficient and orderly operation of the kindergarten.

Professional knowledge carries a weight of 0.622. As educational leaders of the kindergarten, principals must possess a solid foundation of professional knowledge. This includes early childhood education theories, teaching methods, as well as knowledge in child psychology, health, safety, and more. A principal with rich professional knowledge can scientifically guide educational work and enhance the quality of education in the kindergarten.

Expanded knowledge, with a weight of 0.378, besides professional knowledge, principals also need to possess knowledge in areas such as management, psychology, law, among others. This knowledge aids principals in better handling a variety of operational issues in the kindergarten, improving management efficiency and effectiveness.

Human-centric philosophy, with a weight of 0.710, overwhelmingly dominates the influence without authority of principals. This signifies that principals need to constantly attend to the needs of both children and staff, respecting their individuality and differences, and providing support and assistance. A human-centric management philosophy greatly enhances staff job satisfaction and children's sense of well-being.

Harmony and coordination, with a weight of 0.290, although lower in weight, remain a vital component of the influence without authority of principals. It requires principals to maintain fairness and equity in interpersonal relationships, fostering harmony and cooperation within the team. This atmosphere strengthens team cohesion and unity, propelling the sustained and healthy development of the kindergarten.

In summary, the influence without authority of kindergarten principals encompasses various aspects, with personal cultivation, interpersonal communication skills, and a human-centric philosophy holding significant importance. Principals should continually enhance their cultivation and abilities in these areas to better lead the development of the kindergarten.

3.2.3 Third-level dimensions

Equity (0.538): Among character-related factors, equity holds the highest weight. This implies that a principal's fair conduct in daily work plays a vital role in their influence. Equity is not only manifested in resolving disputes between staff and children but also in aspects such as resource allocation and promotion opportunities. A just principal can earn widespread respect from both staff and parents. Respect (0.277), Integrity (0.110), and Honesty (0.075): While these three factors have relatively lower weights, they are equally vital components of a principal's character. Respecting others helps foster harmonious relationships; integrity serves as the foundation for trust between the principal, staff, and parents; while honesty demonstrates the principal's commitment to professional ethics and moral standards. Love and Dedication (1.000): In character-related factors, the weight of love and dedication reaches the highest value. This exemplifies the uniqueness of the early childhood education industry, where deep affection for children and devotion to the educational cause constitute the core of a principal's influence without authority. A principal filled with love and dedication can ignite the enthusiasm of staff and create a warm, caring environment for children's growth.

Communication skills (0.689) and Collaborative abilities (0.311): These two abilities are crucial for principals. Effective communication skills aid principals in engaging in fruitful exchanges with various parties, reducing

misunderstandings and conflicts; while collaborative abilities are essential for a principal to lead the team in working together towards common goals.

Planning and Coordination skills (0.653) and Decision-making and Action (0.374): Planning and coordination skills reflect a principal's strategic foresight and planning capabilities for the long-term development of the kindergarten; while decision-making and action ensure that a principal can swiftly make decisions and execute them effectively when faced with complex issues.

Educational expertise and skills (1.000) and Broad knowledge (1.000): The weights of these two factors are both at their highest values, indicating the significant impact of a principal's professional competence and knowledge breadth on their influence without authority. A principal with a solid foundation in early childhood education expertise and skills can more scientifically guide educational work; while broad knowledge helps principals broaden their perspectives, acquire new knowledge, and provide a continuous source of energy for the innovative development of the kindergarten.

Employee empathy (1.000), Empathy (0.654), and Cohesion and Unity (0.346): These factors mirror a principal's humanistic care for staff. A principal who cares about staff growth and understands their feelings can undoubtedly enhance team cohesion and unity, while by aggregating the strengths of all parties, they can collectively strive towards the developmental goals of the kindergarten.

In conclusion, a kindergarten principal's influence without authority is a multi-dimensional reflection. From character, emotions, and abilities to knowledge and cultivation, as well as humanistic care, every aspect significantly impacts a principal's influence without authority. Therefore, principals should comprehensively enhance their own cultivation and abilities to better leverage influence without authority in driving the sustained and healthy development of the kindergarten.

4. Conclusions

This study employed the Delphi expert consultation method and Analytic Hierarchy Process to establish a framework for the influence without authority of kindergarten principals from a managerial psychology perspective. Through a thorough analysis of the influence without authority of kindergarten principals, it shed light on the pivotal roles of character, competence, knowledge, and emotions in their leadership. Among these factors, character holds the highest weight across all dimensions, showcasing the central importance of moral development and personal integrity in the leadership dynamic. Competence and knowledge closely follow, underscoring their fundamental nature in effective leadership. Despite emotions carrying relatively less weight, they remain key in fostering a nurturing environment in kindergartens. On a more granular level, personal cultivation, interpersonal skills, and a human-centric philosophy stand out prominently in the second-level dimensions. Particularly, the human-centric philosophy underscores the necessity for principals to attentively address individual needs in daily management, emphasizing the value of a compassionate management approach. Furthermore, elements like equity, love and dedication, and communication skills at the third-level level have been identified as significantly influencing the influence without authority of kindergarten principals. The influence without authority wielded by kindergarten principals is a nuanced, multidimensional concept encompassing personal attributes, professional skills, knowledge depth, and interpersonal dynamics among various facets. To bolster their leadership capabilities, principals must comprehensively enhance their development and expertise in these realms. This holistic approach is essential for effectively guiding their teams and fostering the holistic and harmonious advancement of kindergartens.

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