

Study on The Development of Succession Planning for Middle Management Positions at Company P

Zhiliang Li ^{a, *}, Zhaoqi Peng ^b

Internationalchinese College Panyapiwat Institute of Management, Panyapiwat Institute of Management, Pakkret, Nonthaburi, 11120, Thailand

^a 18894461268@163.com, ^b zhqpeng@bjtu.edu.cn

Abstract: In the current economic environment, China's animal health products market is intensely competitive. P company is confronted with a significant shortage of reserve talents for middle-level cadre positions, compounded by limited internal promotion opportunities. As a result, the recruitment and systematic training of reserve cadre talents have become a critical priority within P company's talent development and cadre management strategy. Through comprehensive investigation and rigorous data analysis—incorporating both interview and questionnaire methodologies. This study identifies key deficiencies in P company's management reserve talent training system and proposes corresponding evidence-based solutions. The research demonstrates that through effective management and structured development of reserve talents, P company can successfully alleviate the shortage of qualified candidates and unblock promotion channels, thereby significantly enhancing the organization's competitiveness and adaptive capability. It is further anticipated that this study will offer valuable insights for other enterprises in similar contexts, encouraging them to place greater emphasis on reserve talent cultivation and to establish robust mechanisms for the selection, training, and promotion of such personnel.

Keywords: Middle management; Reserve talent; Competency model; Animal health industry.

1. Introduction

Over the past decade, the rapid expansion of China's breeding industry has significantly propelled growth in the animal health products and biomedicine sectors. Although there are approximately 1.914 million enterprises operating in China's animal health market, the distribution of industry resources remains highly uneven. Large international corporations continue to introduce new pharmaceuticals to the Chinese market, leveraging their research and development capabilities to engage in intense competition with local companies. Meanwhile, the rise of large-scale breeding operations has further intensified market competition, with major conglomerates accounting for 20-30% of the total market share.

As a leading enterprise in this sector, P company, headquartered in Chengdu, has made a total investment of 1.5 billion RMB and established multiple technology R&D institutions. Boasting a strong in-house research team, the company has also forged collaborative partnerships with numerous universities and research institutes, resulting in a substantial portfolio of awards and patents. Compliant with national veterinary drug GMP standards, P company produces high-quality products that enjoy strong market recognition. Its comprehensive product line and professional technical services have earned widespread customer trust, making it a preferred brand for epidemic prevention and control. Guided by its mission to "protect animals and promote human health," the company contributes significantly to animal disease prevention and food safety.

P company adopts a straight-line functional organizational structure, led by a chairman overseeing multiple specialized centers and departments. Having operated for over three decades, the company is currently in a phase of rapid expansion—mirroring the growth patterns of similar enterprises that have previously achieved substantial

increases in revenue and profit following periods of accelerated development. To support its strategic objectives, maintain organizational stability, and reduce the operational impact of staff turnover, P company has implemented a reserve training program targeting middle management positions. However, the current program lacks systematic integration and coherence, indicating a pressing need for a more comprehensive and structured training system.

By integrating foundational competency theories (McClelland, 1973; Spencer & Spencer, 1993) [1-2] and contemporary best practices in talent management (Rothwell, 2010; Ali & Mehreen, 2019) [3-4], this case enriches the academic discourse on reserve talent development. It provides valuable references for future research and practical implementation in similar organizational contexts.

Enterprises increasingly recognize the cultivation of reserve talents—encompassing selection, training, and optimization—as a crucial strategy for sustaining competitive advantage and ensuring long-term success. For P company, as with many others, the management of reserve talent involves a continuous, multi-faceted effort that aligns human resource capabilities with strategic goals.

Through field research and comprehensive analysis of P company's talent training programs, this study identifies key issues within their current system and traces their underlying causes. Based on these insights, specific, actionable recommendations are proposed to enhance the effectiveness of reserve talent cultivation.

The findings hold significant practical value for improving P company's talent development mechanisms and contribute to the broader field of strategic HRM. It is advised that P company further refine its middle management reserve talent program in line with the competency-based framework and practices discussed, not only to address existing gaps but also to set a benchmark for other enterprises within the management industry.

2. Literature Review

2.1. Competency Models in Talent Development

The competency model traces its origins to McClelland's (1973) seminal work, which introduced the concept of "competency" as a set of individual attributes—abilities, traits, and characteristics—closely linked to job performance [1]. This framework shifted the focus of human resource management from traditional markers such as education and experience toward more predictive, behavior-based factors. Despite its theoretical contributions, McClelland's formulation faced criticism due to its broad and operationally vague definition, which limited practical application.

Spencer & Spencer (1993) advanced this model by defining competencies as measurable clusters of knowledge, skills, abilities, and values that differentiate high performers from average ones [2]. Their empirical research established a structured theoretical foundation that has deeply influenced subsequent competency-based practices. However, their studies have been questioned for potential sample selection bias, as they focused predominantly on specific industries and organizational contexts. This narrow scope challenges the generalizability of their findings across diverse cultural and industrial settings, underscoring the need for further validation and contextual adaptation of the competency model.

Reserve talent management represents a strategic approach aimed at ensuring leadership continuity and organizational resilience (Rothwell, 2010) [3]. Rather than a reactive measure, it involves proactive planning to address future leadership vacancies and align talent development with long-term organizational goals. Nevertheless, Rothwell's framework encounters practical obstacles, particularly the tension between short-term performance pressures and long-term investment in talent development. Many organizations struggle to sustain reserve talent programs, often leading to their deferred or ineffective implementation.

An effective reserve talent system integrates scientific selection, personalized development, and continuous evaluation to harmonize individual capabilities with organizational needs (Ali & Mehreen, 2019; Bambacas & Patrickson, 2009; Tison-Thomas, 2019) [4-6]. While such a system enhances both individual adaptability and organizational competitiveness, its resource-intensive nature—especially the high costs of personalized development—poses significant challenges for small and medium-sized enterprises. This economic constraint limits the broad adoption of structured reserve talent programs across varying enterprise scales.

2.2. Middle-Level Management Reserve Talent Development

Middle managers play a critical role in bridging strategic vision and operational execution, translating high-level goals into actionable plans and guiding frontline staff (Ahearn et al., 2014) [7]. Their development requires a balanced emphasis on operational expertise and leadership competence. However, achieving this balance presents practical difficulties, as organizational strategies and cultural contexts vary widely. Ahearn et al.'s research, though insightful, lacks universal applicability due to these contextual disparities, necessitating flexible and situation-sensitive implementation.

A recurring issue in developing middle management

reserves is the transition of technical experts into managerial roles. Many technically proficient employees lack essential management and leadership skills when promoted, leading to performance gaps and role incompetence (Floyd & Wooldridge, 1997) [8]. While this challenge is well-documented, existing research offers limited concrete strategies or structured pathways to facilitate this transition effectively. Thus, further in-depth study is essential to design practical training interventions that support technical experts in acquiring managerial capabilities [6, 8-12].

3. Research Methods and Study Design

3.1. Methods of Research

This study employs a multi-method approach to ensure comprehensive and reliable data collection, combining qualitative and quantitative techniques to address the research objectives. The primary methods include literature review, interviews, and questionnaire surveys, each serving a distinct purpose in examining the development of middle management reserve talents at P company [11-20].

3.1.1. Literature review method

A systematic literature review was conducted to analyze secondary data and evaluate information relevant to the research topic. This method helps to contextualize the study within existing theoretical and empirical frameworks, synthesizing key concepts and prior findings to establish a structured foundation for subsequent investigation.

3.1.2. Interview method

As a qualitative research tool, interviews were utilized to facilitate direct verbal communication between researchers and participants, allowing for in-depth exploration of complex issues. Various formats were employed—including personal, telephone, and focus group discussions—to gather rich, nuanced insights. The interactive nature of interviews enhances the depth of case-based analysis, contributing to a more holistic understanding of organizational practices and challenges.

3.1.3. Questionnaire survey

A structured questionnaire was designed to collect data on respondents' perceptions, experiences, and psychological motivations. This method enables broad coverage across diverse employee levels, ensuring that the study captures a representative sample of opinions and attitudes. The questionnaire served as the primary instrument for quantitative data collection, supporting the generalization of findings and facilitating statistical analysis.

3.2. Study Design

To thoroughly assess the middle management reserve talent development plan at P company and improve research efficacy, a dual-phase study design was implemented.

Structured interviews

Conducted senior and middle management to evaluate the completeness of the talent development plan, identify issues in selection and recruitment mechanisms, and assess current training methods.

Questionnaire survey

Administered to grassroots managers and employees to gather feedback on the implementation of the reserve talent process, including selection principles, training approaches, and developmental support.

3.3. Data Collection Process

The survey was conducted from March to May 2025, covering all employees of P company. A total of 300 questionnaires were distributed using a combination of paper and electronic forms. Of these, 297 were returned, yielding a recovery rate of 99.00%. After excluding responses with significant incomplete information or logical inconsistencies, 280 valid questionnaires were retained. The final effective response rate stood at 93.33%, indicating high data quality and reliability for subsequent analysis.

3.3.1. Interview design and results analysis

Semi-structured interviews were conducted with middle

and senior managers at P company to gain in-depth insights into the internal needs of its reserve talent management system. This flexible interview format allowed for the collection of rich, case-specific data, enabling a thorough exploration of key issues and organizational dynamics.

A total of five middle and senior managers were selected as interviewees (see Table 1 for demographic details). The decision to limit the number to five was based on several considerations: alignment with interview objectives, the requirements of an in-depth qualitative approach, the need for representative yet manageable data saturation, and constraints related to research resources and time.

Table 1. Basic information of interviewees of P company’s middle and senior management

Name	Position	Age (years)	Education	Time of entry	In charge of business
X	General manager	54	PhD candidate	2024.07	Company operations
Y	Deputy General Manager	57	Master student	2024.09	Marketing center
Z	Deputy General Manager	48	PhD candidate	2020.03	Research and development center
A	Controller	42	Master’s student	2010.01	Finance department business
B	Personnel manager	38	Master’s student	2012.03	Personnel department business

Source: Author’s work.

3.3.2. Interview recording and analysis

Key concepts were synthesized through systematic collation and analysis. Senior executives emphasized the tension between talent retention and organizational growth. General Manager X identified a shortage of middle management personnel during the expansion period. Vice General Manager Y remarked that the company’s rapid business growth and market share increase exceeded the competencies of the existing middle management. Both executives concurred that inadequate strategic planning for talent reserves resulted in suboptimal training programs and a reduced ability to effectively address emerging challenges.

3.3.3. Questionnaire design

This study conducted an investigation into the evaluation data provided by all employees regarding the reserve talent training program at company P, utilizing a questionnaire to identify the program’s strengths and areas requiring improvement. The questionnaire employed a 5-point Likert scale for scoring, where a score of 1 indicated complete non-compliance, characterized by a failure to clarify the training system and a total lack of familiarity with the program. A score of 2 reflected poor compliance, signifying an unclear training system and numerous unresolved questions about the program. A score of 3 denoted general agreement, indicating a basic explanation of the training with some remaining uncertainties. A score of 4 represented good agreement, suggesting a comprehensive training system and a fundamental understanding of the program content. Finally, a score of 5 signified complete compliance, reflecting a systematic training system and a detailed comprehension of the program’s specifics. Accordingly, all grassroots managers were required to conduct objective evaluations across three dimensions, adhering strictly to these criteria.

3.3.4. Questionnaire survey process and data statistics

This study employed a questionnaire survey to assess employees’ evaluations of the reserve talent training program at company P. The instrument utilized a 5-point Likert scale, ranging from 1 (indicating complete non-compliance) to 5 (indicating complete compliance). The survey was conducted over a three-month period, from March to May 2025 (see

Table 2). Within the framework of social science research, 300 questionnaires were distributed to a representative sample, resulting in 297 responses, of which 280 were considered valid. This corresponds to an effective response rate of 93.33%. Such a high response rate reflects a strong level of participant engagement and suggests that the collected data are both reliable and representative of the target population.

Table 2. Basic information of respondents on succession planning development program among grassroots management personnel at company P

Variables	Content	Number of people (people)	Statistical results (%)
Gender	male	221	78.93%
	female	59	21.07%
Age (years)	25 to 35	70	25.00%
	35 ~ 45	140	50.00%
	45 to 55	35	12.50%
	55 +	35	12.50%
Educational background	Junior college	30	10.71%
	Undergraduate	196	69.29%
	Graduate and above	54	19.29%
Length of service	Less than 1 year	60	21.43%
	1 to 3 years	112	39.64%
	3 to 5 years	84	30.00%
	More than 5 years	24	8.57%

Source: Author’s work.

3.3.5. Analysis of data statistical results

The survey assessing familiarity with the reserve talent training program comprised four questions. The first question indicated that company P requires increased emphasis on staff development, receiving a mean score of 3.0816. The second question highlighted the necessity of evaluating the training outcomes, with a score of 3.0000. The third question revealed a limited understanding of the assessment content, reflected by a score of 2.9796. The fourth question demonstrated that

departmental leaders endorse the training program, as evidenced by a score of 3.1020. Overall, company P exhibits a relatively advanced and well-structured approach to the design and implementation of its reserve talent training initiatives. The survey findings, presented in detail in Table 3,

provide a comprehensive analysis of talent management practices across various organizations, underscoring the importance of talent reserves and the strategies employed for their cultivation.

Table 3. Analysis of the results of the questionnaire survey on the familiarity of the reserve talent training program

Dimensions	Survey content	Evenly split results
Familiarity with reserve talent training program	The company attaches great importance to the training of reserve talents	3.0816
	Through training or system explanation, I have a clear understanding of P company's reserve talent training program	3.0000
	I have a clear understanding of the assessment content and indicators of the reserve talent training program	2.9796
	Department leaders encourage employees to actively participate in the reserve talent training program	3.1020

Source: Author's work.

In the evaluation of talent selection, the weighted average scores across six questions revealed that although company P has established a talent inventory model, its practical application requires further enhancement. The initial development of the competency model for middle management positions demands more comprehensive training efforts. Additionally, the current evaluation framework lacks adequate scientific rigor and necessitates refinement. While

the talent selection process is characterized by fairness, equity, and transparency, the evaluation system does not sufficiently account for the potential and developmental capacity of managerial candidates. Overall, there is considerable scope for improvement in company P's talent selection practices. The survey findings, presented in detail in Table 4, provide valuable insights into respondents' demographic profiles, understanding of job requirements, recruitment channels, and job-seeking intentions.

Table 4. Analysis of the results of the questionnaire survey on talent selection for the reserve talent training program of company P

Dimensions	Survey content	Evenly split results
Talent selection	P company carries out talent inventory every year, and the process is standardized and orderly.	2.8571
	P company has a clear competency model for middle management positions, which I can do. Through it, I can understand my own shortcomings.	2.9184
	P company has a scientific and perfect evaluation program to screen out suitable reserve talents.	2.6327
	P company's talent selection process is fair, just and transparent.	3.1020
Talent selection	P company's talent selection fully considers the potential and development space of managers.	2.9388
	Are the selection tools currently used by P company effective?	2.6531

Source: Author's work.

3.4. Reliability and Validity Analysis

The reliability of the scale was evaluated using Cronbach's Alpha coefficient, an indicator of internal consistency. The alpha values obtained for the three dimensions were 0.806, 0.875, and 0.821, respectively, each surpassing the conventional threshold of 0.8, thereby indicating a high degree of reliability for the scale. Most inter-item correlation coefficients exceeded 0.6, suggesting strong associations and effective discrimination among the items. However, the correlation coefficients for the items "clearly understand the company's talent development plan through training or system explanation" and "the company has leadership development plan" were comparatively lower, at 0.354 and 0.416, respectively, which may reflect issues related to comprehension bias or measurement inaccuracy. Despite this, the removal of these two items did not result in a significant increase in the overall alpha coefficient, implying that their contribution to the scale's reliability is limited. Overall, the scale demonstrates high reliability and well-defined dimensions, supporting its suitability for subsequent analyses.

Regarding validity, the Kaiser-Meyer-Olkin (KMO) measure was 0.751, indicating moderate sampling adequacy and suggesting the presence of construct validity. Specifically, a KMO value between 0.7 and 0.8 denotes a moderate fit of

the scale structure, reflecting a moderate degree of variable aggregation and the existence of an underlying latent factor structure. Bartlett's test of sphericity yielded a chi-square value of 551.545 with 105 degrees of freedom, significant at the 1% level ($p = 0.000$). These results indicate a significant difference between the correlation matrix and the identity matrix, confirming strong linear relationships among variables and leading to the rejection of the null hypothesis that no relationships exist among the variables.

4. Problems in the Training of Reserve Talents for Middle Management Positions in P Company

This study employed questionnaires and interviews to distribute and gather pertinent data, which were subsequently organized and analyzed. The findings indicate that the issues present in the reserve talent program for middle management positions at company P, along with their underlying causes, are as follows:

4.1. P Company's Talent Reserve Training Lacks Planning

P company demonstrates significant deficiencies in its approach to talent reserve and reserve cadre training, characterized by an absence of strategic orientation, a lack of

systematic planning, randomness in training implementation, and an inability to dynamically adjust to evolving organizational needs.

Firstly, the company exhibits a notable lack of strategic direction in cultivating its talent reserves. This deficiency manifests in the absence of coherent strategic alignment, clearly defined development objectives, and a guiding framework for talent cultivation. For example, during periods of rapid organizational growth, P company failed to proactively develop a pool of middle-level management candidates, resulting in a shortage of qualified personnel to fill critical vacancies. Survey data corroborate this issue, revealing that grassroots managers at P company assign only moderate importance to the company's efforts in talent reserve development, as evidenced by an average score of 3.0816, suggesting insufficient organizational emphasis on this area.

Secondly, the training process for reserve talents is markedly unstructured and reactive. Currently, P company's approach is predominantly vacancy-driven, whereby training is initiated primarily to address immediate staffing needs rather than through a planned, continuous development program. This ad hoc method leads to the formation of a "fire-fighting" talent pool, which undermines the preparedness and capability of reserve personnel to meet complex and anticipated challenges. This perspective is further supported by executive interviews, which highlight the random and unplanned nature of backup talent cultivation within the company.

Thirdly, the company lacks a long-term, sustainable framework for reserve talent development. There is an absence of clearly articulated training plans, including defined training durations and stage-specific objectives, resulting in a fragmented and unsystematic approach to talent growth. Survey responses indicate a limited understanding among grassroots managers regarding the company's reserve talent training plans, with an average score of only 3.0000, underscoring the need for greater transparency and communication concerning talent development schemes.

Finally, P company does not possess a dynamic adjustment mechanism to align its talent reserve training with shifting enterprise strategies and market conditions. The absence of such a mechanism prevents timely revisions to training content and methodologies, causing the development program to lag behind actual organizational requirements. This shortcoming is exemplified by interview feedback noting instances where employees who performed well in certain roles were not subsequently promoted to middle management positions, reflecting a failure to adapt talent selection and training processes dynamically.

In summary, P company's current practices in talent reserve and cadre training are hindered by a lack of strategic foresight, systematic planning, and adaptive capacity, which collectively impede the effective development of a robust and responsive talent pipeline.

4.2. P company's Talent Selection Lacks Scientificity

The talent selection process at P company demonstrates a notable deficiency in scientific rigor, as reflected by the absence of clearly defined evaluation criteria, competency frameworks, diversified assessment methodologies, and procedural transparency. Specifically, P company lacks standardized and evidence-based talent evaluation metrics

during the selection process. Currently, the company predominantly relies on business performance indicators and subjective judgments for talent screening, without incorporating quantitative measures or third-party assessment tools. This reliance on subjective evaluation is corroborated by survey data indicating that frontline managers rated the company only 2.63 out of 5 for having a scientific and comprehensive talent evaluation system to identify suitable reserve talents, underscoring the absence of a robust evaluative framework.

Moreover, the company has not established a competency model tailored to middle management roles, resulting in an unclear and imprecise approach to assessing the specific skills and attributes required for these positions. The lack of clearly articulated competencies impedes the development of a targeted and methodical process for selecting and nurturing potential talent. Interviews with senior executives further confirm the absence of scientifically grounded selection methodologies within the organization.

Although P company nominally employs a 360-degree evaluation as part of its selection criteria, it fails to implement a diversified array of assessment methods, such as psychological testing or other multi-faceted evaluation techniques. The concept of the "choose body" remains ambiguous within the company's framework. Survey responses from first-line managers, who assigned a score of 2.94 regarding the company's consideration of managerial potential and developmental capacity, suggest that insufficient emphasis is placed on these critical factors during talent selection.

Finally, the lack of transparency in P company's selection and employment procedures has engendered skepticism and diminished trust among employees. The opacity of standards and processes has led to doubts concerning the fairness and impartiality of selection outcomes. This concern is substantiated by survey data wherein grassroots managers rated the fairness, justice, and openness of the company's selection and employment procedures at a low score of 3.10, indicating a perceived deficiency in procedural transparency.

4.3. P Company's Talent Training Lacks Specificity and Effectiveness

The talent selection process at P company demonstrates a lack of scientific rigor, as indicated by several critical deficiencies: the absence of structured training content, misalignment between job requirements and training modules, a failure to implement differentiated training strategies, the lack of a systematic training framework, and insufficient opportunities for post-training practical application.

Firstly, the training content provided by P company is disconnected from actual job demands and lacks customization. For instance, the training designed for grassroots supervisors is overly generic and does not address the competencies required for middle management roles. This shortcoming is reflected in the limited effectiveness of the training, as evidenced by survey data showing that grassroots managers rated the statement "the training carried out by P company is based on individual needs" at only 2.8367 points, highlighting the company's deficiency in personalized training approaches.

Secondly, P company does not offer differentiated talent development programs tailored to the varying abilities and potentials of its employees. Reserve talents are subjected to a uniform training model without individualized learning plans,

resulting in inefficient use of training resources and suboptimal outcomes. As noted by Vice President Z in an interview, effective middle management requires organizational, managerial, and coordination skills. Since reserve talents are typically promoted from grassroots positions and often lack relevant experience and capabilities, training programs should prioritize enhancing these competencies. The current approach, however, fails to meet this demand, underscoring the need for improved training methodologies for reserve personnel.

Thirdly, the company lacks a comprehensive and systematic training plan. There is no clearly defined training cycle or explicit training objectives, which leads to inconsistent and short-term training initiatives. The absence of a phased and structured plan results in fragmented and unsystematic training efforts. Supporting this observation, survey data reveal that grassroots managers rated the statement “P company regularly evaluates the training effect” at a low score of 2.7755, indicating inadequate assessment of training effectiveness.

Finally, due to limited practical training opportunities, reserve talents at P company experience a slow process of integration and adaptation. The lack of mechanisms such as job rotation and hands-on training creates a significant gap between theoretical knowledge and practical application. Manager B’s interview highlights this issue, noting that after participating in the reserve talent program and subsequent promotion, it took approximately one year to adjust to the new role. Manager B also expressed feelings of difficulty and unsuitability for the position, which led to decreased motivation. This testimony underscores the company’s failure to adequately address the specific demands and skill levels of potential reserve talents within its training programs.

In summary, P company’s talent selection and development processes are hindered by a lack of scientific foundation,

insufficient customization, absence of differentiated and systematic training plans, and inadequate practical training opportunities, all of which compromise the effectiveness of its talent cultivation efforts.

5. P Company Optimized the Training Plan of Reserve Talents for Middle Management Positions

The strategic planning system of company P serves as the foundational basis for designing reserve talent development programs targeted at middle management roles. The integration of talent management strategy with the overall corporate strategy is essential for constructing the company’s strategic framework and fostering a pool of reserve talent. To ensure alignment with the organization’s strategic objectives, a comprehensive career development management system for reserve talents is implemented, thereby supporting the sustainability of future talent reserves and facilitating professional advancement. The demand for middle management positions arises from two primary sources: organizational growth driven by strategic adjustments and the creation of new departments. Additionally, a prudent estimation of management personnel turnover is conducted, accounting for routine personnel changes such as voluntary resignations, systematic transfers, promotions, retirements, and other factors influencing position requirements.

5.1. Middle-Level Management Positions Should Possess the Necessary Abilities

Through strategic analysis, we can obtain the competencies required for middle management positions, as shown in Table 5:

Table 5. Competency themes derived from strategic analysis

Description of strategy	Scenarios	Goals	Means	Competency topics
Quality is safer and more controllable	Stable and reliable product quality and standardization of production processes is the guarantee of corporate reputation. Stable and reliable product quality, make safe and reliable safety indicators more market, “reassured” set up good trust relationship, to enhance their competitiveness and gain momentum.	The cost is more controllable, the quality more controllable, the target more controllable and the risk more controllable.	The whole process of quality supervision, whole-process supervision, real-time supervision, quality traceability. Set up quality information all public management system, strengthen enterprise management cadres and staff training, guidance and units to make guild regulations XingYao industry association.	Analyze and solve problems; Risk prevention and control.
Products are more reliable and advanced	The leading degree of vaccine products helps enterprises to establish technical barriers in the market competition of vaccine products. By attracting customer resources, they occupy a larger market, create a more favorable development environment, improve social benefits, and form new market competitive advantages.	The production is safer, the employees are safer, the products are safer and the operation is safer.	We will strengthen the driving force for scientific research and innovation, continuously increase investment in vaccine research and development, update production technology, and strive to make breakthroughs in production technology, realize the upgrading of process technology, further improve the quality of vaccines, improve market distribution channels, support supply chain development, and expand product coverage.	Innovative planning and continuous learning.
Management is more scientific and efficient	The system adopts scientific management methods and establishes a coordination mechanism between departments, which is conducive to enhancing market acuity, improving production efficiency, improving product quality and promoting the development of enterprises.	Research and development concept are more advanced, more advanced management mechanism, more advanced technology; The user more, the price is lower, wider area.	In order to strengthen the management of cross-functional vaccine, strengthen information sharing, realize resources sharing. Set professional development goals, improve professional and management levels, strengthen talent training, and strengthen multi-professional collaboration. Establish compatible incentive mechanism, using targeted examination, to promote the management behavior.	Coordinate communication and win-win cooperation.
Employees and grow faster	High-quality personnel team is the first resource for the development of enterprises. High-quality team can not only significantly improve the research and development ability of enterprises, but also continuously create new business opportunities, new growth space and market space for enterprises, and provide internal power source for the development of organizations.	Management decisions more scientific, processes, set up a more reasonable and departmental linkage between more closely.	We will establish a reasonable talent introduction mechanism, improve the ability and quality of all staff, strengthen the value creation ability of enterprises, and give special treatment to key talents.	When use, ability training.

Source: Author’s work.

5.2. Ability Benchmarking Confirmation

The behavioral event interview (BEI) method is widely recognized as the predominant approach for competency modeling in middle management roles. The effective application of the BEI method relies heavily on the selection of senior executives with extensive functional expertise, who can serve as behavioral exemplars for other middle managers by providing referential behavioral knowledge. This method evaluates actual situations by examining behavioral indicators within a competency index system, facilitating the identification and screening of post-specific competency elements. Executives demonstrate competencies and competent behaviors that inform the development of measurement scales and serve as behavioral benchmarks for senior management.

In the case of company P, the BEI method was employed to select middle management talent. To ensure the

representativeness and validity of the interview data, 23 current middle managers were chosen as participants, divided into two groups: high-performing managers (ranked within the top 10) and low-performing managers (ranked below the third from the bottom), enabling a comparative analysis. Following the interview protocol, participants recounted their experiences of success and failure, with each interview lasting between 40 and 50 minutes. All interviews were recorded, and the data were transcribed verbatim. By comparing the competency characteristics associated with differing performance levels between the two groups, the study aimed to identify, define, describe, and categorize key competency elements. Subject cases were analyzed, and after selecting three core elements, events inconsistent with actual management indicators were excluded. Controversial competency characteristics were identified, culminating in the determination of twelve competency elements.

Subsequent analysis and coding facilitated the organization of strategic competency elements, with the BEI method

employed to identify benchmark competencies. Statistical processing, integration, and comprehensive analysis were conducted. The initial set of 24 competency elements was consolidated into five dimensions: individual ability, leadership traits, work attitude, intrinsic motivation, and moral character. These dimensions formed the structural basis

of the middle management competency model. Detailed content is presented in Table 6, which is grounded in strategic scenarios. Through rigorous analysis and the effective integration of various elements post-interview, this study articulates the definitions, gradations, and levels of the identified competencies.

Table 6. Preliminary competency model for middle management positions

Dimensions	Competence characteristics	
	Strategic analysis	Ability to post interview
Ability of individual	Problem solving ability, risk control ability, innovation ability, overall planning ability, communication and coordination ability	Professional knowledge reserve, resource integration ability, cost control ability
Leadership traits	Know people well, influence ability, training and guidance	Strategic thinking, conflict management, team building
Work attitude	Win-win cooperation, hard work and efficiency	A performance orientation, conscientious
Inner drive	Keep learning	Stress tolerance, emotion management
Moral character	Integrity	Integrity, professionalism

Source: Author’s work.

To ensure that the identified competency elements are both scientifically valid and representative, this study adopts a comprehensive methodology incorporating structured questionnaires and in-depth expert interviews to determine the definitive competency elements. A questionnaire survey was administered to all employees of company P, requiring respondents to prioritize the importance of competency elements. Specifically, from an initial set of 24 competency elements relevant to middle management positions, participants were asked to select and rank up to 15 key elements according to their perceived importance. The level sum method was applied for statistical analysis, assigning a value of 15 to the highest-ranked item, 14 to the second, and so forth. Out of 300 distributed questionnaires, 280 valid responses were collected, yielding a response rate of 93.33%. The final results were ranked by total scores, with higher scores indicating greater importance for middle management competencies.

To enhance the accuracy and scientific rigor of the competency model for middle managers, a multidisciplinary expert panel was convened, comprising project team members, senior consultants from consulting firms, university research professors, and other external specialists.

Over a three-day intensive workshop, the panel engaged in detailed discussions covering strategic scenario analyses and post-interview competency assessments. This process resulted in the identification of a refined list of 15 competency elements. Subsequently, a questionnaire survey was conducted with 20 participants to compare and analyze differences in competency element evaluations. Based on these analyses and consultations with organizational leadership, the final classification, definitions, rankings, and descriptions of the competency dimensions were established. Integrating these findings with insights from senior company executives, five core competency dimensions for middle management were extracted: personal ability, leadership traits, work attitude, inner drive, and moral character. Within these dimensions, 15 competency elements were selected as most appropriate for middle managers at company P.

Finally, a hierarchical competency model was developed for middle management positions at company P, structured around the five identified dimensions. Each dimension encompasses multiple specific competency elements, as detailed in Table 7. This model provides a systematic framework for understanding and assessing the competencies essential for effective middle management within the organization.

Table 7. the competence of the middle-level management positions factor weight system

Table 7: Weighting System for competency elements of Middle management positions Elements and indicators (A)	Primary indicators	Secondary indicators
	Personal ability to B1	
Risk Prevention and Control C2		
Overall planning C3		
Communication and coordination C4		
Professional knowledge C5		
Leadership traits B2		C6 resources integration ability
		Know people and use C7 well
		Training and instruction C8
Work attitude B3		Team building C9
		Work hard for results C10
Inner drive B4		Performance oriented C11
		Continuous learning C12
Moral Character B5		Innovation C13
		Integrity and integrity C14
		Fairness and integrity C15

Source: Author’s work.

5.3. Certification Scheme Design

5.3.1. Definition of clear responsibilities

The responsibility for this function should be assigned to the certification team and the qualifications management committee, who are tasked with delineating specific duties and privileges. Members of the certification team should actively participate in the evaluation and management of senior management personnel, conducting comprehensive and objective assessments of the qualifications and job competencies of middle managers. The qualifications of the management committee members ought to be determined through input from various departments, with representatives involved in the development of certification rules and procedures for middle management, as well as in overseeing their implementation. The primary objective of these arrangements is to establish a certification framework that guarantees fairness, reliability, and the protection of the rights and interests of all stakeholders, thereby facilitating the subsequent promotion of individuals to middle management positions.

5.3.2. Development of the certification process

A formalized certification process and system should be developed to ensure the standardization and transparency of the certification procedures. Specifically, the introduction of the “Middle Management Post Qualification Management Measures” and the “Middle Management Post Qualification Certification Operation Manual” is recommended to explicitly regulate key aspects of the middle management certification process, including eligibility criteria, procedural steps, and evaluation standards. The “Middle Management Qualification Management Measures” provide a clear legal foundation, outlining procedures and certification requirements, thereby establishing a regulatory framework that supports the lawful execution of the certification process. Meanwhile, the “Middle Management Job Qualification Certification Operation Manual” specifies detailed regulations concerning the preparation of application materials, the review process, and the announcement of certification results. This ensures the standardization of the certification process and contributes to the effective implementation of certification schemes for middle managers, thereby providing essential safeguards for the operationalization of the certification framework.

5.4. Formally Introduce

5.4.1. Publicity and pilot phase

This phase necessitates ensuring the comprehensive stability of cross-material integration and certification documentation. It involves thoroughly explaining and training relevant personnel, including providing a general overview of the competency model, its significance in the promotion of middle-level management positions, and evidence demonstrating that the certification materials encompass specific process certifications, certification criteria, and standards. These efforts aim to assist managers in successfully completing pilot applications and practical evaluations.

Preparation of materials must be conducted with careful consideration to guarantee a stable cross-functional environment, effective communication, and an educational

atmosphere conducive to the efficient transmission and reception of information. Pilot applications should incorporate a feedback mechanism to promptly capture and address suggestions, thereby facilitating a smooth certification process and seamless subsequent promotion activities. With these measures in place, the advancement of the middle management competency model will proceed in a proficient and orderly manner.

5.4.2. Application and improvement phase

Following the development of a competency model specifically designed for middle management roles, the organization formally implemented it in practice. This model was employed to enhance the efficacy of improvement initiatives, ensuring that the competencies of middle managers align with the organization’s strategic objectives and operational demands. A structured approach was adopted, integrating the formal competency model into the evaluation of middle management capabilities.

Analysis of current middle managers’ competencies revealed their strengths and identified areas requiring development. By comparing these findings against a standardized competency framework, organizations can accurately position their management personnel within the organizational hierarchy and pinpoint developmental needs. Furthermore, the competency model serves as a reference standard during the selection of new middle managers, aiding in the identification of candidates possessing the requisite competencies for promotion.

The competency model also informs the design of targeted professional training and development plans for middle managers. Assessment results for each individual can be utilized to formulate tailored training programs and developmental objectives. From an organizational perspective, by considering multiple hierarchical levels, middle managers can recognize and address gaps in their overall management capabilities. By integrating competency model evaluations with existing training and development initiatives, the model can be continuously refined to better align with organizational growth and the practical demands of middle management roles. This ongoing optimization contributes to the enhancement of the management talent structure in terms of capability. Ultimately, the competency model plays a pivotal role in facilitating the promotion of middle managers and supporting broader organizational development.

5.5. Selection and Evaluation of Reserve Personnel

In the process of selecting and evaluating reserve talent, it is essential to minimize the influence of subjective factors to enhance the scientific rigor, systematic approach, transparency, and fairness of the procedure. Specifically, the following steps can be implemented: initially, organize a pool of backup candidates and encourage voluntary registration; subsequently, candidates may either self-nominate or be recommended for inclusion in the talent inventory. Through assessments of abilities and performance, individuals demonstrating superior competencies are identified and appointed as reserve talent for middle management roles. The detailed process is illustrated in Figure 1 below:

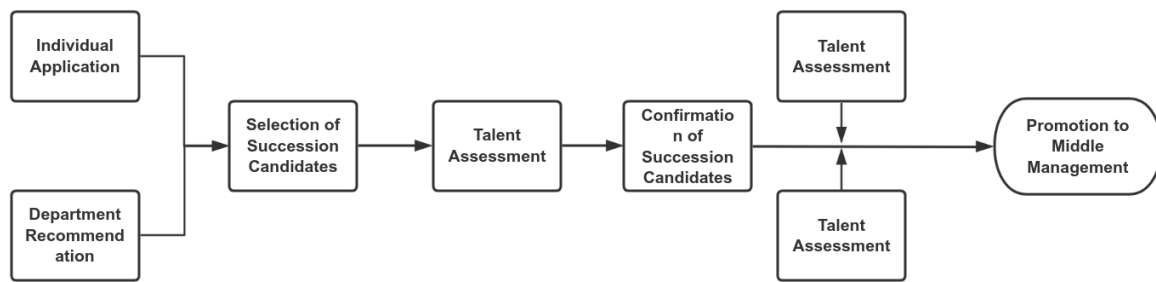


Figure 1. The selection and evaluation of reserve personnel implementation process

5.5.1. Registration and recommendation

To guarantee that the selection process for reserve talent is equitable, impartial, and transparent, and that the evaluation is conducted in a scientific, comprehensive, and objective manner, a competitive selection methodology is adopted during the candidate identification phase. Reserve talents are sourced through multiple channels, including individual applications and departmental endorsements. Organizations may implement various strategies to encourage employees to proactively register as candidates for middle management reserve positions. The company fosters a supportive organizational environment through targeted publicity campaigns, thereby attracting the attention of leadership. These initiatives clarify to employees the importance of being designated as reserve candidates, highlighting the potential positive impact on their career development. Through cultural initiatives and employee welfare programs, the company cultivates a positive workplace atmosphere conducive to personal growth, enabling employees to perceive the company’s commitment and support for management position reserve candidates. Enterprise leaders consistently emphasize the critical role of reserve candidates in daily operations, motivating employees to actively engage and assume responsibilities. This approach helps employees appreciate the significance of becoming reserve candidates for their individual career advancement while simultaneously contributing to the organization’s long-term development.

Collectively, these measures stimulate employee enthusiasm and encourage them to aspire to become reserve candidates for management roles.

5.5.2. Inventory of management position reserve candidates

A talent inventory constitutes a comprehensive evaluation of an enterprise’s talent pool, encompassing recruitment, training, management, and retention strategies. This analysis involves a thorough assessment of the talent structure, taking into account organizational design, human resource distribution patterns, and talent output modalities, among other factors. It supports the relevant departments in developing structured talent planning schemes and enables the enterprise to gain a holistic understanding of its current talent stock. Additionally, it facilitates the diagnosis of the stability, strengths, and potential within the existing talent team. Key personnel occupying critical positions are identified, and gaps between the current talent pool and the enterprise’s strategic development objectives are analyzed. The results of the talent inventory are compared with talent training and development programs to continuously refine alignment with organizational growth and middle management succession requirements. This process aims to enhance the composition and competency levels of middle management cadres. The matching methodology is detailed in Table 8.

Table 8. Performance grade definition and evaluation criteria

Performance level definitions and evaluation Criteria	Definition	Total assessment points in the last three years
high	Employees are able to consistently exceed set targets	6-9
In the	Employees consistently meet set targets and sometimes exceed them.	3-6
low	Employees are unable to consistently meet targets	0-3

Source: Author’s work.

The assessment of employee potential underscores the importance of continuous learning and the ability to translate acquired knowledge into improved work performance, which is vital for organizational development. This assessment process is structured into two phases: the “competency meeting” and the “round table meeting.” Based on established potential indicators, candidates are required to select two to four representative behavioral events for self-analysis and to propose corresponding improvement strategies.

The Talent Nine Box Model is employed to systematically evaluate the performance and potential of all promotion candidates. This model categorizes individuals into one of nine distinct boxes, each representing different combinations

of performance and potential levels. To achieve a comprehensive evaluation of talent, it is imperative to develop a customized assessment framework that integrates both performance and potential dimensions. Such a framework should be grounded in relevant theoretical foundations, including psychology and management principles, and should incorporate diverse tools and technologies to enhance its thoroughness and precision. Furthermore, the model must be aligned with the organizational culture and strategic goals to effectively identify and cultivate talent, thereby supporting the organization’s sustainable growth. For further details, refer to Figure 2.

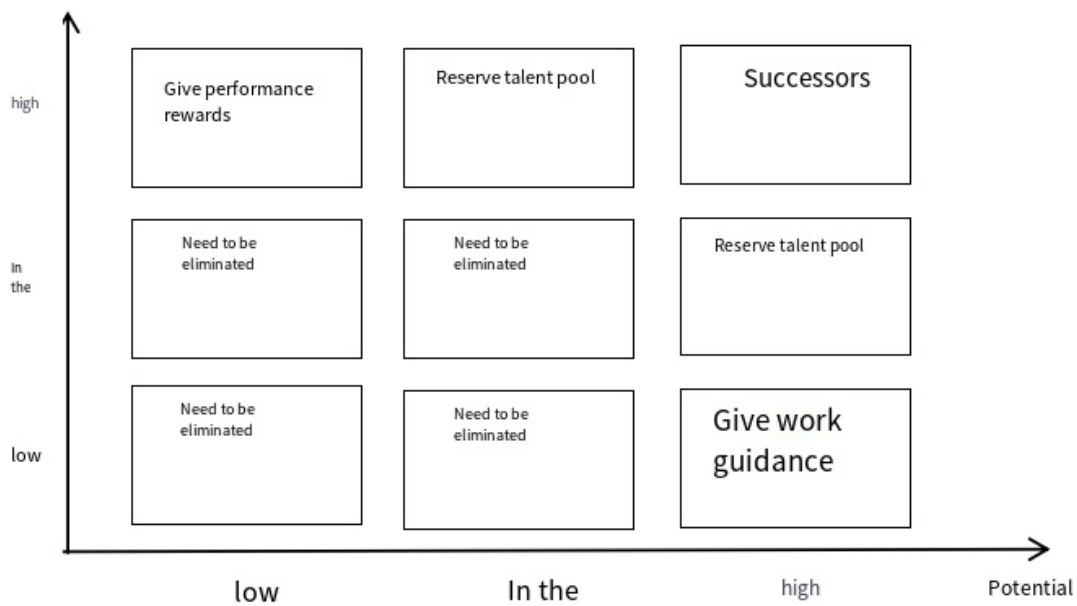


Figure 2. Position talent potential and performance evaluation model

Talent calibration constitutes a vital phase within the talent inventory process. Following the aggregation of evaluative feedback from managers across multiple hierarchical levels, a unified talent assessment conclusion is derived through a series of structured deliberations. This calibration process serves to reduce evaluator bias, thereby enhancing the objectivity and consistency of assessments related to talent performance and potential. It fulfills three principal managerial functions: the identification of high-potential individuals, the analysis of developmental needs, and the provision of data-driven support for talent decision-making systems. Moreover, it contributes to improving the reliability and validity of the organizational talent evaluation framework.

Participants in talent calibration sessions typically include heads of business units, senior management teams, and human resources expert groups. During these meetings, business unit leaders systematically present information regarding talent reserves within their domains, analyzing the strengths and developmental gaps of these individuals based on their career trajectories. This process facilitates a more comprehensive understanding of candidates among managers at various levels and supports the review and evaluation procedures. To assess the outcomes of the review and evaluation model, it is advisable to employ a variety of metrics and methodologies, including accuracy, precision, recall, F1 score, receiver operating characteristic (ROC) curves, area under the curve (AUC) values, cross-validation techniques, and learning curves. The calibration process is essential for mitigating evaluation biases and ensuring the integrity of talent assessments.

5.6. Furthermore, Develop and Implement a Training Plan

The reserve training system for middle management roles holds significant value due to its precise promotion mechanism, which is activated upon the occurrence of vacancies, thereby necessitating a departure from conventional training approaches. The prior training model was marked by structural deficiencies, notably its excessively broad content and lack of specificity. To overcome these limitations, organizations should strategically align their training programs with the interpretation of overarching strategic objectives and the competency framework

associated with specific positions, focusing on addressing critical knowledge gaps. This alignment aims to enhance the knowledge base, skill integration, and overall capabilities of potential promotable candidates through targeted developmental interventions.

5.6.1. Evaluation of the current status of reserve talent based on a competency model

Utilizing a performance contribution and developmental potential evaluation system, this study has identified a highly qualified pool of middle management reserve candidates following a rigorous selection process. A comprehensive diagnostic assessment of the team's competencies and job fit is essential to ensure congruence with evolving responsibilities and organizational demands. Employing a structural competency model, a systematic diagnosis and analysis are conducted to quantitatively assess the team's suitability for management tasks, thereby providing a scientific foundation for the construction of a talent echelon.

5.6.2. Identification of promotion positions

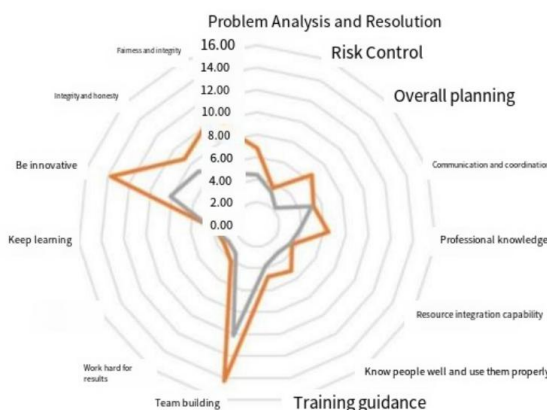
At the initial stage of training, organizations must accurately define the target management positions. Leveraging a five-year job vacancy forecasting model, combined with parameters such as career history, developmental intentions, and organizational strategy of the candidates, in-depth behavioral event interview techniques are employed to predict and determine person-position fit. Based on the outcomes of this job matching process, differentiated development pathways are designed, and targeted competency acceleration programs are implemented to enhance candidates' job readiness. This approach ensures a seamless transition of managerial authority and supports the uninterrupted operation of the enterprise.

5.6.3. Competency assessment

This study employed a 360-degree assessment methodology grounded in the competency framework specific to middle management roles, utilizing a structured behavioral anchoring scale to facilitate a comprehensive evaluation. The assessment process comprised three methodical stages. Initially, the competency model for the target position was analyzed, with core competency elements translated into five-tier behavioral gradient indicators. Each competency score was derived by averaging the evaluations

from all raters to mitigate individual evaluator bias. The second stage involved innovating the evaluation structure by moving beyond the traditional hierarchical assessment model and incorporating four evaluative perspectives: direct supervisors, peer collaborators, subordinates, and customer service representatives. Additionally, a self-assessment component was integrated to construct a multidimensional competency diagnostic matrix, thereby enabling precise identification of developmental gaps. In the final stage, the Analytic Hierarchy Process (AHP) was applied to process the data, assigning distinct weight coefficients to five competency dimensions and fifteen sub-elements within the

model. For instance, the “personal effectiveness” dimension, specifically the “problem analysis and solution” sub-element, accounted for 31.77% of the overall model weight, with this factor contributing 21.24% within its dimension. Following weight aggregation, the theoretical maximum score for this factor was calculated as $100 \times 31.77\% \times 21.24\% = 6.74$. When the average observed score for this factor was 3.6, the standardized conversion formula was applied as follows: $\text{actual score} = (\text{measured value} / \text{theoretical maximum value}) \times \text{weighted score} = (3.6 / 5) \times 6.74 = 4.85$. Further details are illustrated in Figure 3.



— The gray line indicates the current assessment status of P Company's succession planning.
 — The orange line indicates the training objectives for P Company's succession planning.

Figure 3. Comparison of succession planning development objectives and actual conditions

5.6.4. Competency analysis

A comprehensive and in-depth identification of strengths and weaknesses can be achieved by comparing the established competency model with the competencies exhibited by reserve cadres. When a significant competency gap is observed—specifically, when the factor matching degree falls below 50%—it becomes imperative to implement targeted developmental interventions. These interventions should encompass tailored learning strategies aimed at enhancing individual competencies, thereby facilitating the progression of reserve cadres into higher management roles while simultaneously improving their own skill sets.

During the implementation phase, dynamic development records are maintained, and formative assessments are conducted on a quarterly basis. Based on the trajectory of the competency development curve, the training plan is adjusted dynamically. Additionally, records of competency maturation, including performance improvements and the Competency Maturity Index (CMI), are systematically documented. Reserve talent training plan based on competency model

Through a comparative analysis of reserve talents' performance and training objectives, we identify the strengths and weaknesses of their competencies. Based on this, we propose an improvement plan to enhance the quality of reserve talents, supporting their development into middle management positions. The reserve talent development plan based on competency can effectively improve the core competency of reserve talents, so that they can be qualified for middle management positions more quickly. They can achieve personal development. A talent development plan enables enterprises to establish a sustainable human resources echelon, enhance organizational competitiveness, foster the organization's sustainable development, enhance the

scientific and systematic management of the enterprise, and augment its value contribution.

Competency model for middle management positions in the reserve personnel training plan, with training content broken down into project schemes, interconnected among each project module to break through the traditional training mode. Interactive learning mode is integrated into the reserve talent training program to achieve scientific and accurate reserve talent training. Implementation is based on the competency model of reserve personnel training, with clear training objectives consistent with the goal of In talent development, the training content should be designed based on these competency elements., The key content of the enterprise determines the training mode., consider the learning needs and styles of staff at different levels, and choose a senior lecturer with rich experience and professionalism, To improve the training effect, consider the frequency of training and ensure uninterrupted and continuous training programs, systematically improve the competency, and promote the continuous improvement of organizational efficiency.

6. Summary

Talent calibration constitutes a vital phase within the talent inventory process. Following the aggregation of evaluative feedback from managers across multiple hierarchical levels, a unified talent assessment conclusion is derived through a series of structured deliberations. This calibration process serves to reduce evaluator bias, thereby enhancing the objectivity and consistency of assessments related to talent performance and potential. Moreover, it fulfills three principal managerial functions: the identification of high-potential individuals, the analysis of developmental needs,

and the provision of data-driven support for talent decision-making systems. Consequently, talent calibration improves the reliability and validity of organizational talent evaluation frameworks.

The primary participants in talent calibration meetings include heads of business units, senior management teams, and human resources expert groups. During these sessions, business unit leaders systematically present information regarding talent reserves within their respective domains, analyzing the strengths and developmental gaps of these individuals based on their career trajectories. This process facilitates a more comprehensive understanding of candidates among managers at various levels and supports the review and evaluation process. To assess the outcomes of the review and evaluation model, it is advisable to employ a variety of metrics and methodologies, such as accuracy, precision, recall, F1 score, receiver operating characteristic (ROC) curves, area under the curve (AUC) values, cross-validation techniques, and learning curves. Ultimately, the calibration process aims to mitigate evaluation biases and enhance the overall quality of talent assessments.

References

- [1] McClelland, D. C. (1973). Testing for competence rather than for "intelligence." *American Psychologist*, 28(1), 1–14.
- [2] Spencer, L., & Spencer, S. (1993). *Evaluación de competencia en el trabajo: Modelo para un desempeño superior*. New York, NY: John Wiley & Sons.
- [3] Rothwell, W. (2010). *Effective succession planning: Ensuring leadership continuity and building talent from within* (4th ed.). New York, NY: AMACOM.
- [4] Ali, Z., & Mehreen, A. (2019). Understanding succession planning as a combating strategy for turnover intentions. *Journal of Advances in Management Research*, 16(2), 216–233.
- [5] Bambacas, M., & Patrickson, M. (2009). Assessment of communication skills in manager selection: Some evidence from Australia. *Journal of Management Development*, 28(2), 109–120.
- [6] Tison-Thomas, L. (2019). *Succession planning: Facilitating leadership succession in response to the retirement of presidential leadership* (Doctoral dissertation). Northeastern University, Boston, MA.
- [7] Ahearne, M., Lam, S. K., & Kraus, F. (2014). Performance impact of middle managers' adaptive strategy implementation: The role of social capital. *Strategic Management Journal*, 35(1), 68–87.
- [8] Floyd, S. W., & Wooldridge, B. (1997). Middle management's strategic influence and organizational performance. *Journal of Management Studies*, 34(3), 465–485.
- [9] Beeson, J. (1998). Succession planning: Building the management corps. *Business Horizons*, 41(5), 61–66.
- [10] De Sordi, J. O., Meireles, M., & de Azevedo, M. C. (2014). Information selection by managers: Priorities and values attributed to the dimensions of information. *Online Information Review*, 38(5), 661–679.
- [11] Yang, H. (2019). On the importance of human resource management and cost management in information system construction. *Science, Technology and Innovation*, (23), 23–24.
- [12] Liu, X., Lyu, R., & Xue, Y. (2022). "Adaptation" or "destruction"? A cross-level study on the impact of CEO external promotion on firm performance. *Management Review*, 34(6), 45–57.
- [13] Liu, Y. (2022). *An empirical study on the influencing factors of employee training effect in XF Company* (Master's thesis, Chang'an University).
- [14] Li, H. (2024). Research on the training and management of reserve cadres in state-owned enterprises in the new era. *Public Relations World*, (10), 38–40.
- [15] Li, Y. (2020). Establishment and management strategy of reserve talent archives. *Talent Resource Development*, (22), 28–29.
- [16] Tang, M. (2020). Thinking on the training of middle-level management reserve talents in state-owned enterprises. *Business News*, (15), 112–113.
- [17] Lu, J. (2022). The organic integration of party building and party history study and education in enterprises: A case study of Marketing Branch of Beijing Water Group. *Chinese and Foreign Enterprise Culture*, (9), 75–77.
- [18] Yang, J. (2022). *Optimization of financial personnel compensation incentive system in A Company* (Master's thesis, Yunnan Normal University).
- [19] Wei, S., Zhao, T., & Wang, J. (2023). Research on vocational competence training strategies of college students under the background of energy structure transformation. *Industrial Innovation Research*, (19), 178–180.
- [20] Hua, L. (2022). Research on risk prevention and control of enterprise contract life cycle from the perspective of internal control. *Economist*, (11), 101–103.