RESEARCH ON THE OPTIMIZATION OF THE TRAINING SYSTEM FOR LIVE E-COMMERCE OPERATION MANAGERS BASED ON THE COMPETENCY MODEL*

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Abstract

The objectives of this study are: 1) to construct a competency model for live-stream e-commerce operation supervisors in Company A, 2) to evaluate the current competency level of the supervisor team using the fuzzy comprehensive evaluation method, 3) to identify the major competency gaps and performance weaknesses and 4) to propose a systematic training optimization framework to enhance operational effectiveness. This research adopts a mixed-method design combining expert interviews and quantitative evaluation. The population consists of live-stream e-commerce operation supervisors of Company A, and the sample comprises 20 supervisors selected through purposive sampling based on their managerial experience and job relevance. Data were collected using competency rating scales and expert assessment forms, and analyzed through fuzzy comprehensive evaluation, weighted scoring analysis, and descriptive statistics.

The research results show that: 1) the team's overall competency score is 67.31, falling within the "fairly poor" range, 2) core competencies such as real-

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time control and result optimization are significantly weak, 3) general competencies, including teamwork and communication, show moderate deficiencies, while time management is relatively strong; and 4) professional competencies—especially rule compliance, resource coordination, and data analysis—are the most critical bottlenecks affecting performance. The study concludes that the training system for e-commerce operation supervisors should be reconstructed around three competency dimensions: core ability, general ability, and professional ability. The recommended strategies include establishing real-scenario simulation training, closed-loop optimization drills, cross-department collaboration practice, and systematic rule and data analysis training, to enhance supervisory performance and ensure sustainable talent development in live-stream e-commerce operations.

Keywords: Competency Model, Live-stream E-commerce, Training Optimization, Fuzzy Evaluation, Operational Management

Introduction

live-stream e-commerce has emerged as one of the most dynamic and rapidly expanding sectors in China's digital economy. By integrating real-time interactivity, entertainment, and online purchasing, live-streaming has transformed traditional retail models and reshaped consumer behavior patterns. According to industry statistics, the market value of China's live-stream e-commerce surpassed three trillion yuan in 2024, positioning it as a core driver of digital trade and innovation. The increasing convergence of social media, big data, and online retail has made live-streaming a dominant marketing channel for enterprises seeking direct engagement with consumers (Guo & Huang, 2025).

Alongside this industrial growth, the demand for skilled live-stream operation managers has intensified. These professionals play a vital role in coordinating multiple dimensions of live-stream operations—including content

design, marketing strategy, data analysis, and technical management—to ensure performance stability and audience engagement. However, despite the sector's impressive expansion, several challenges persist. Many enterprises report inconsistent operational quality, insufficient real-time control, and weak cross-departmental collaboration. Moreover, current training systems for live-stream managers remain largely theoretical and fail to equip supervisors with the practical competencies required for high-pressure, data-driven environments (Hu et al., 2024; Dai & Yao, 2025). To address these deficiencies, the present research applies the competency-based management framework, which emphasizes measurable behavioral indicators of superior performance. The concept of competency, first proposed by McClelland (1973), shifted focus from traditional intelligence testing to the identification of underlying skills, traits, and motivations that determine job success. Later scholars such as Boyatzis (1982) and Spencer and Spencer (1993) refined this model, while Bartram (2005) expanded it into the standardized "Great Eight Competencies." In the Chinese context, scholars such as Liu Xuefang (2006) and Wang Jianmin (2012) localized the model by integrating collectivist and relational dimensions, thus enhancing its applicability to organizational behavior in China. Applying this theoretical foundation to live-stream e-commerce is both innovative and necessary. Competency-based approaches enable organizations to identify key performance drivers, evaluate skill gaps, and design targeted, evidence-based training programs. Within this context, competency assessment provides a scientific basis for improving decision-making, coordination, and regulatory compliance, all of which are crucial for sustainable digital operations (Campion et al., 2011; Shippmann, 2013). Therefore, this study aims to construct and evaluate a competency model for live-stream e-commerce operation managers, using Company A as a representative case. By employing the Fuzzy Comprehensive Evaluation (FCE) method and expert assessment, the research seeks to measure the current

competency level of supervisors, identify critical weaknesses, and propose strategies for optimizing the existing training system.

Theoretically, this research contributes to the extension of competency theory within the digital commerce domain. Practically, it provides actionable insights and policy recommendations for enterprise talent development, ensuring that live-stream e-commerce managers are equipped with the professional, technical, and analytical competencies required to thrive in China's competitive digital marketplace.

Objectives

1. To construct a competency model for live-stream e-commerce operation supervisors in Company A.

2. To evaluate the current competency level of the supervisor team using the Fuzzy Comprehensive Evaluation Method (FCE).

3. To identify the major competency gaps and performance weaknesses that affect managerial efficiency in live-stream operations.

4. To propose a systematic training optimization framework to enhance the operational effectiveness and professional development of live-stream e-commerce operation supervisors.

Literature Review

Competency theory has long been recognized as a cornerstone in organizational behavior and human resource management. Originating from McClelland's (1973) argument that traditional intelligence tests fail to predict real job performance, the theory emphasizes that true competence arises from a combination of motives, traits, knowledge, and skills. This perspective redirected managerial assessment from aptitude-based testing toward behavior-oriented evaluation. Boyatzis (1982) expanded on this idea, proposing that superior

performance is driven by interrelated clusters of competencies such as achievement orientation, leadership, and interpersonal understanding. Later, Spencer and Spencer (1993) refined the concept through the “Iceberg Model,” which distinguishes visible abilities like knowledge and skills from deeper personal attributes such as self-concept and motivation.

Subsequent scholars, including Bartram (2005) and Campion et al. (2011), standardized the application of competency models across industries. Bartram’s “Great Eight Competencies” established universal behavioral domains—ranging from decision-making and supporting others to adaptability—providing organizations with a structured approach to assess and develop talent. In the Chinese academic context, researchers such as Liu Xuefang, Wang Jianmin, and Yang Muchun localized the theory by integrating cultural dimensions of collectivism, relational harmony, and hierarchical coordination. These adaptations highlight the flexibility of competency theory and its ability to align global frameworks with national management practices.

The digital transformation era has further redefined the meaning of competency. As noted by Yoo, Henfridsson, and Lyytinen (2010), digital innovation has created a fluid and data-driven environment that demands adaptability, analytical literacy, and real-time decision-making. Within e-commerce, competency models increasingly focus on digital awareness, cross-functional collaboration, and data intelligence (Kaplan & Haenlein, 2010; Kietzmann et al., 2011). In the live-stream economy, these requirements become even more complex, as operation managers must blend marketing insight, technological control, and emotional communication to maintain audience engagement (Chen, 2020; Guo & Huang, 2025). Studies by Hu, Cao, and Liu (2024) also emphasize the dual role of supervisors as mediators between algorithmic systems and human creativity, ensuring compliance while sustaining authentic consumer interaction.

Building upon this evolving context, the competency requirements for live-stream operation managers can be understood across three interconnected dimensions: core, general, and professional. Core competencies encompass essential behavioral abilities such as real-time monitoring, situational judgment, and performance optimization—skills that reflect the individual's capacity to respond to dynamic broadcast conditions. General competencies refer to transferable soft skills, particularly communication, teamwork, and time management, which are crucial for coordinating complex operational workflows. Professional competencies include specialized knowledge in data analysis, platform rule mastery, and resource coordination, ensuring both compliance and efficiency in live-stream operations. Together, these three layers create a holistic framework that integrates behavioral, interpersonal, and technical elements of managerial capability.

Integrating competency theory into live-stream management thus bridges traditional HR frameworks with digital innovation. As Dubois (1993) and Shippmann (2013) suggest, competency-based evaluation systems enhance organizational adaptability and talent alignment by linking individual performance to strategic objectives. For live-stream e-commerce enterprises, this integration provides a scientific foundation for designing targeted training programs, performance assessments, and professional development pathways. Competency-based management not only facilitates continuous learning and innovation but also ensures that organizations remain resilient amid rapid technological and market changes.

In conclusion, existing scholarship reveals that competency theory has evolved from a psychological construct into a multidimensional strategic model applicable to modern digital industries. Competencies now serve as measurable indicators of superior performance, blending behavioral insight with technological adaptability. Within the live-stream e-commerce sector, these integrated competencies form the basis for evaluating managerial performance and

optimizing training systems, thereby laying the theoretical and conceptual foundation for this study's empirical investigation.

Methodology

This study employed a mixed-method design integrating qualitative and quantitative approaches to construct and evaluate the competency model for live-stream e-commerce operation supervisors. The qualitative phase involved expert interviews and literature analysis to identify key competency dimensions, while the quantitative phase applied the Fuzzy Comprehensive Evaluation (FCE) method to assess supervisors' competency levels.

The research was conducted in Company A, a representative enterprise in China's live-stream e-commerce industry. A total of 20 supervisors were selected through purposive sampling based on their managerial experience and job relevance. Data were collected using competency rating scales and expert assessment forms, which covered three main dimensions—core, general, and professional competencies.

The FCE method was used to calculate weighted scores and evaluate performance levels. Descriptive analysis summarized competency results, while expert input ensured the reliability and validity of the instruments. Ethical considerations, including informed consent and confidentiality, were observed throughout the process.

In summary, the methodological framework combines expert insight with quantitative rigor, providing a reliable basis for identifying competency gaps and proposing targeted training strategies for live-stream e-commerce operation managers.

Result

The purpose of this chapter is to present the empirical results of the competency assessment of live-stream e-commerce operation supervisors at Company A. Using the Fuzzy Comprehensive Evaluation Method (FCE), the research analyzed three main dimensions: Core Competency, General Competency, and Professional Competency. The total weighted score of the team was 67.31 points, which corresponds to the "Fair" range (60–69) according to the established evaluation scale.

Among the three competency dimensions, Professional Competency had the highest weight (0.411) but also the lowest score (65.70), indicating that professional knowledge and operational expertise are the weakest areas. Core Competency and General Competency scored 68.11 and 68.70 respectively, suggesting moderate but inconsistent performance across dimensions.

Table 1 Summary of Competency Evaluation Results

Competency Dimension	Weight	Sub-Dimensions	Weighted Score	Evaluation Level
Core Competency	0.261	Real-time Control, Result Attribution, Result Optimization	68.11	Fair
General Competency	0.328	Team Collaboration, Communication, Time Management	68.70	Fair
Professional Competency	0.411	Platform Rule Mastery, Data Analysis, Resource Coordination, Process Design	65.70	Below Average
Overall Evaluation	—	—	67.31	Fair (Marginally Acceptable)

The competency assessment of Company A's live-stream e-commerce operation supervisors reveals that the overall performance level is marginally acceptable, with a total weighted score of 67.31, categorized as Fair.

Among the three dimensions, Professional Competency—which carries the highest importance (weight 0.411)—recorded the lowest score (65.70), reflecting significant weaknesses in platform rule mastery, data analysis, and resource coordination.

Meanwhile, Core Competency (68.11) and General Competency (68.70) showed slightly better but still moderate results, indicating that supervisors possess fundamental operational and time management skills, yet lack consistency in execution and communication.

In conclusion, the findings suggest that while Company A's supervisors are capable of maintaining day-to-day operations, they lack strategic, analytical, and professional proficiency necessary for high-performance management.

To enhance competitiveness and ensure sustainable business growth, targeted training programs focusing on professional knowledge, real-time control, and cross-department collaboration are critically required.

Conclusions

This study assessed the competency level of live-stream e-commerce operation supervisors at Company A by applying the Fuzzy Comprehensive Evaluation Method (FCE). The overall weighted score of 67.31, categorized as Fair, indicates that the team's performance remains below the expected professional standard. The findings reveal that the supervisors possess only a moderate level of operational capability, with evident weaknesses in professional knowledge, decision-making, and coordination skills (Campion et al., 2011; Spencer & Spencer, 1993). Among the three major competency dimensions, Professional Competency had the highest importance weight (0.411) but recorded the lowest score (65.70), reflecting serious shortcomings in areas such as platform rule mastery, data analysis, and resource coordination. These deficiencies directly affect operational efficiency and regulatory compliance during live-streaming activities (Helberger, Pierson, & Poell, 2018).

In contrast, Core Competency (68.11) and General Competency (68.70) performed slightly better but still within the "Fair" range, showing that while the team can manage basic tasks, they lack real-time control, performance optimization, and cross-department communication skills (Boyatzis, 1982; Bartram, 2005). In summary, the results indicate that Company A's supervisors demonstrate basic operational competence but lack the strategic insight, analytical capability, and leadership adaptability required to thrive in the fast-changing digital commerce environment (McClelland, 1973; Yoo, Henfridsson, & Lyytinen, 2010).

Discussion

The findings reveal that the overall competency level of live-stream e-commerce operation supervisors at Company A is moderate, with a total weighted score of 67.31 ("Fair"). Among the three dimensions, Professional Competency—which includes platform rule mastery, data analysis, and resource coordination—received the lowest score, indicating insufficient technical expertise and compliance awareness. In contrast, Core and General Competencies performed slightly better but still showed inconsistency in real-time decision-making and teamwork.

These results confirm that while supervisors possess basic operational skills, they lack the analytical and strategic capabilities essential for high-performance management in the digital commerce environment. The weakness in professional competency reflects the industry's broader challenge: training systems that emphasize theoretical instruction rather than practical, scenario-based learning. The discussion supports McClelland's (1973) and Spencer's (1993) competency theories, demonstrating that sustainable performance depends not only on knowledge and skills but also on behavioral adaptability and decision-making under pressure. Consistent with studies by Bartram (2005) and Campion

et al. (2011), this research reinforces the importance of integrating competency-based evaluation into managerial training to bridge the gap between individual capability and organizational performance. In summary, the discussion highlights that the competency-based training model should prioritize three key areas: 1) improving professional knowledge and data literacy, 2) enhancing real-time control and teamwork, and 3) promoting continuous learning and cross-departmental collaboration. Such improvements will strengthen managerial adaptability and ensure sustainable competitiveness in the live-stream e-commerce sector.

Recommendations

The study suggests that professional training for live-stream e-commerce supervisors should focus on practical skill development rather than theoretical instruction. Emphasis should be placed on enhancing data analysis, platform compliance, and real-time decision-making through interactive and scenario-based learning. Collaboration and communication across departments should be strengthened to improve operational efficiency, while continuous competency evaluation can ensure ongoing professional growth. Fostering a culture of lifelong learning and innovation will further help supervisors adapt to the fast-evolving digital commerce environment and maintain sustainable performance.

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