



Organizational Resources and Occupational Competence Development: The Roles of Support Systems, Infrastructure, and Self-Management among University Lecturers in China

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Abstract

Occupational competence development is increasingly viewed as an organizational responsibility rather than solely an individual concern. This study examines how university infrastructure and institutional support systems influence lecturers' occupational competence directly and indirectly through self-management. Drawing on Job Demands–Resources theory and organizational support theory, survey data from 578 full-time lecturers in Chinese undergraduate universities were analysed using structural equation modelling. Results showed that infrastructure positively affected self-management ($\beta = .147$, $p = .002$) and occupational competence ($\beta = .158$, $p = .001$). Support systems had stronger effects on self-management ($\beta = .234$, $p < .001$) and occupational competence ($\beta = .182$, $p < .001$). Self-management also positively predicted occupational competence ($\beta = .155$, $p = .005$) and partially mediated both relationships. The findings suggest that competence development depends not only on material resources but also on organizational support that enables employees to use those resources effectively.

Keywords: Competence development, Infrastructure, Occupational competence, Organizational support, Self-management, University lecturers.

1. Introduction

Occupational competence is central to organizational effectiveness because it represents employees' integrated capacity to apply knowledge, skills, attitudes, values, and behavioural capabilities in the performance of work roles (Boyatzis, 2008; Campion et al., 2011; Mulder, 2014; Spencer & Spencer, 1993). Competence is therefore more than a stock of qualifications. It is a context-dependent capability that develops through practice, learning, feedback, resource access, and sustained self-regulation. From an organizational perspective, competence development is consequently both an employee process and a management responsibility.

Universities provide an especially relevant organizational context for studying competence development. Academic work combines teaching, research, student guidance, academic service, digital adaptation, and continuous learning. Lecturers frequently work with high autonomy but also face competing demands, delayed performance outcomes, evaluation pressures, and complex coordination requirements. These characteristics make lecturers' occupational competence dependent not only on individual expertise but also on whether the organization supplies resources that enable effective professional action.

This study distinguishes two organizational resources. University infrastructure refers to the physical and technological conditions that support work, including facilities, equipment, digital resources, libraries, laboratories, and appropriate working environments. Support systems refer to the formal and informal organizational arrangements that facilitate employee functioning and development, including mentoring, training, administrative assistance, performance feedback, recognition, and career guidance. Both may support competence, but they are unlikely to operate identically. Infrastructure provides the material platform for work, whereas support systems influence how employees interpret expectations, access opportunities, solve problems, and sustain development.

A second issue concerns the mechanism through which organizational resources become competence. Academic employees must plan, prioritize, monitor progress, regulate motivation, and maintain professional routines. Self-management therefore offers a plausible behavioural pathway through which organizational resources are converted into competence-related action. Self-leadership and goal-setting research indicates that self-regulatory processes direct attention, sustain effort, and support performance (Locke & Latham, 2002; Manz, 1986; Neck & Houghton, 2006).

Accordingly, this study addresses a focused organizational question: how do infrastructure and support systems enable occupational competence development, and to what extent is their influence transmitted through self-management? The analysis uses a comprehensive structural model that also includes family support, social

status symbols, and conscientiousness. Thus, the reported organizational coefficients represent effects estimated while relevant contextual and personal antecedents are simultaneously controlled.

2. Theoretical Background and Hypotheses

2.1. Occupational Competence as an Organizationally Enabled Capability

Competency research commonly defines competence as an integrated configuration of attributes and behaviours that supports effective or superior performance (Boyatzis, 2008; Spencer & Spencer, 1993). Competency modelling further emphasizes alignment between employee capabilities, work roles, and organizational objectives (Campion et al., 2011). This alignment implies that competence cannot be separated from the organizational conditions under which it is enacted.

Job Demands–Resources (JD–R) theory provides a useful resource-based explanation. Job resources help employees achieve work goals, reduce the costs of demands, stimulate learning, and promote development (Bakker & Demerouti, 2017; Demerouti et al., 2001). Applied to occupational competence, the theory suggests that organizations develop employee capability not only through formal training but also through the broader configuration of material, technological, relational, and developmental resources available at work.

2.2. University Infrastructure

Infrastructure constitutes a material job resource. Adequate facilities, technologies, information access, equipment, and working environments can reduce avoidable barriers and create opportunities for employees to practise, learn, collaborate, and perform. For lecturers, infrastructure can support lesson preparation, research activity, digital teaching, academic communication, and professional learning. Nevertheless, infrastructure does not automatically produce competence; employees must still organize and use available resources. The following hypotheses are proposed:

- H₁. University infrastructure positively influences lecturers’ self-management.
- H₂. University infrastructure positively influences lecturers’ occupational competence.

2.3. Organizational Support Systems

Organizational support theory proposes that employees form general beliefs about whether their organization values their contributions and cares about their well-being (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002). Perceived organizational support is associated with favourable attitudes, commitment, well-being, and performance-related outcomes (Kurtessis et al., 2017). More recent work also emphasizes that organizational care matters because it shapes employees’ interpretations of institutional actions and their willingness to reciprocate through constructive work behaviour (Eisenberger et al., 2020).

In competence development, support systems include mentoring, developmental feedback, training, research assistance, administrative facilitation, recognition, and career guidance. These arrangements may be more immediately actionable than infrastructure because they directly influence learning opportunities, role clarity, motivation, and access to expertise. Human resource development similarly treats learning and performance improvement as organizational processes rather than isolated individual activities (Swanson & Holton, 2009).

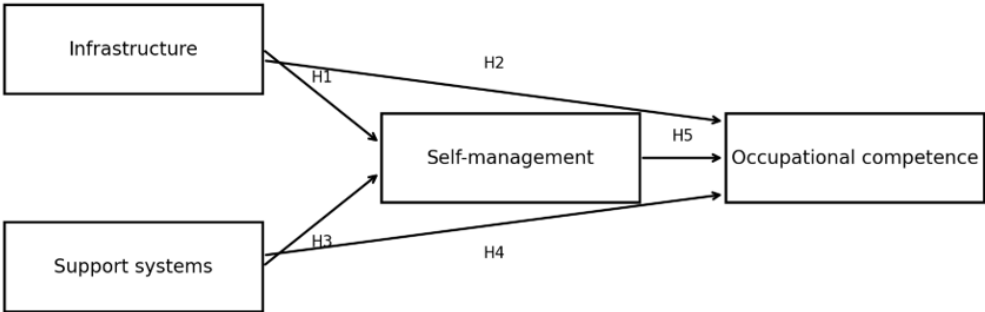
- H₃. Organizational support systems positively influence lecturers’ self-management.
- H₄. Organizational support systems positively influence lecturers’ occupational competence.

2.4. Self-Management as a Conversion Mechanism

Self-management concerns the regulation of goals, time, behaviour, motivation, emotions, priorities, and work strategies. Self-leadership theory explains how individuals influence themselves through behaviour-focused and cognitive strategies (Manz, 1986; Neck & Houghton, 2006). Goal-setting theory likewise argues that specific goals direct attention, mobilize effort, increase persistence, and stimulate strategy development (Locke & Latham, 2002).

Within organizations, self-management should not be interpreted as a substitute for support. Rather, it is the behavioural mechanism through which employees mobilize available resources. Infrastructure may make planning and execution more feasible, while support systems may strengthen role clarity, confidence, and motivation. Occupational competence is therefore expected to develop through both direct resource effects and indirect effects transmitted through self-management.

- H₅. Self-management positively influences lecturers’ occupational competence.
- H₆. Self-management mediates the relationship between university infrastructure and occupational competence.
- H₇. Self-management mediates the relationship between organizational support systems and occupational competence.



Self-management mediates the effects of both organizational resources (H6-H7).

Figure 1. Proposed organizational resource model of occupational competence development.

3. Method

3.1. Design, sample, and procedure

The study employed a quantitative, cross-sectional, explanatory design. The target population was full-time lecturers employed in Chinese undergraduate universities. Data were collected through the Wenjuanxing online platform using purposive convenience sampling because no complete publicly accessible national list of lecturers was available. Purposive screening ensured that respondents met the occupational criteria, while convenience access enabled participation across geographically dispersed institutions.

A total of 607 questionnaires were collected. After excluding 29 incomplete, inconsistent, careless, or ineligible responses, 578 valid cases remained, producing an effective response rate of 95.22%. The sample included lecturers from public and private undergraduate universities and from multiple regions of China.

3.2. Measures

All constructs were assessed using multi-item measures adapted from established instruments and contextualized for Chinese higher education. Responses were recorded on a five-point Likert scale. The present analysis focuses on four constructs, while the complete SEM retains seven constructs to account for relevant institutional, family, social, and individual antecedents.

Table 1. Focal constructs and organizational interpretation.

Construct	Organizational interpretation	Role in model
University infrastructure	Physical, technological, informational, and environmental resources that enable employees to perform and learn.	Organizational resource
Support systems	Mentoring, training, feedback, administrative assistance, recognition, and career-development arrangements.	Organizational resource
Self-management	Self-cognition, planning, coordination, motivation, and behavioural control.	Mediating capability
Occupational competence	Integrated knowledge, skills, attitudes, values, and behaviours required for effective professional performance.	Development outcome

3.3. Analytical Strategy

SPSS Statistics 27 was used for data preparation, descriptive analysis, reliability assessment, exploratory factor analysis, and assumption testing. AMOS 26 was used for confirmatory factor analysis and structural equation modelling. Measurement quality was evaluated before structural paths were interpreted, consistent with the two-step approach to SEM (Anderson & Gerbing, 1988). Model fit was assessed using χ^2/df , GFI, RMSEA, CFI, NFI, and IFI (Hair et al., 2019; Hu & Bentler, 1999; Kline, 2016). Indirect effects were tested using 5,000 bootstrap samples and 95% confidence intervals; mediation was supported when the confidence interval excluded zero (Hayes, 2018; Zhao et al., 2010).

4. Results

4.1. Measurement and Structural Model Fit

The seven-factor confirmatory model demonstrated satisfactory fit. The structural model retained the same fit statistics and was therefore suitable for hypothesis testing.

Table 2. Model fit statistics.

Index	Recommended criterion	Observed value	Assessment
χ^2	—	718.946	—
df	—	539	—
χ^2/df	< 3.00	1.334	Good
GFI	> 0.90	0.934	Good
RMSEA	< 0.08	0.024	Good
CFI	> 0.90	0.982	Good
NFI	> 0.90	0.931	Good
IFI	> 0.90	0.982	Good

Note: Criteria are consistent with widely used SEM guidance. The measurement and structural models reported identical global fit values.

4.2. Direct Effects

All focal direct paths were positive and statistically significant. Support systems were the strongest organizational predictor of both self-management and occupational competence.

Table 3. Direct structural effects.

Path	B	β	SE	CR	p	Decision
Infrastructure → self-management	0.151	0.147	0.050	3.049	0.002	Supported
Support systems → self-management	0.259	0.234	0.059	4.411	< 0.001	Supported
Self-management → competence	0.148	0.155	0.053	2.781	0.005	Supported
Infrastructure → competence	0.155	0.158	0.048	3.255	0.001	Supported
Support systems → competence	0.194	0.182	0.057	3.399	< 0.001	Supported

Note: B = unstandardized coefficient; β = standardized coefficient; CR = critical ratio. Coefficients were estimated within the complete seven-construct structural model.

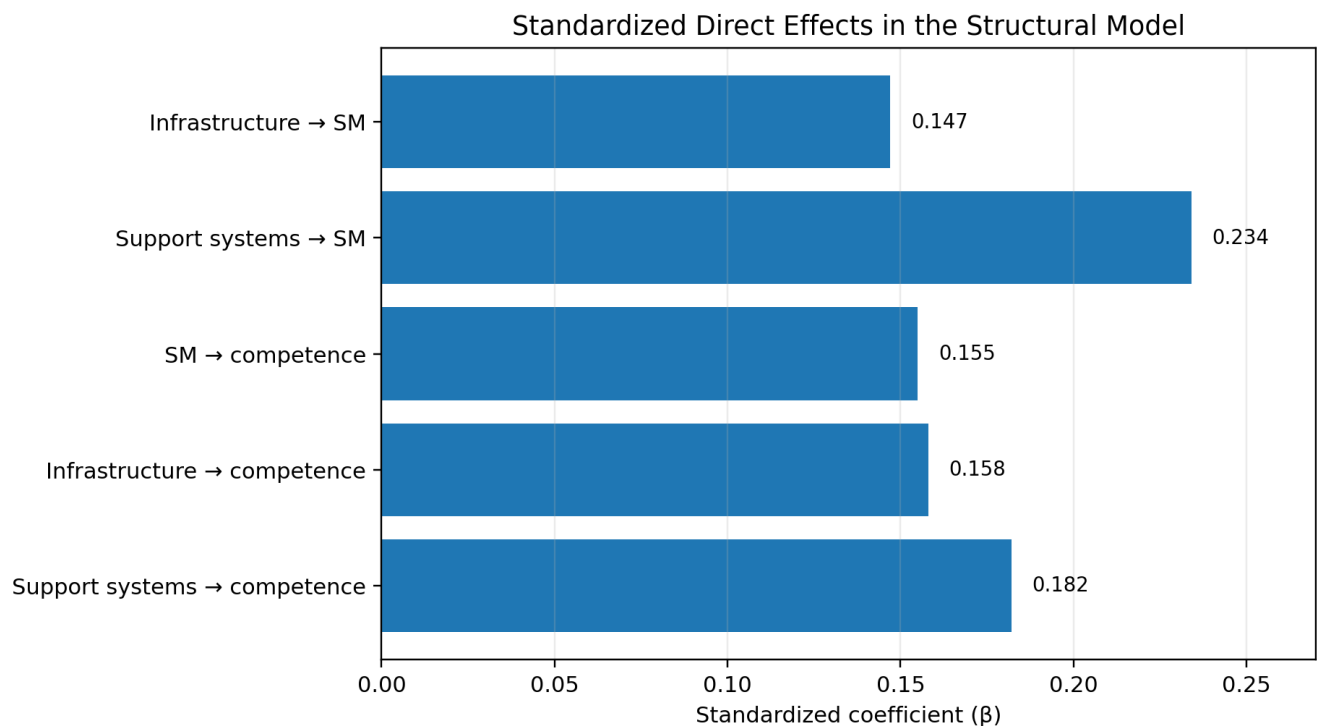


Figure 2. Standardized direct effects for the focal organizational resource model.

4.3. Indirect Effects

Bootstrap analysis showed that self-management partially mediated both organizational resource relationships. Because the direct effects remained significant alongside significant indirect effects, the mediation pattern was partial rather than complete.

Table 4. Bootstrap mediation results

Indirect pathway	Direct effect	Indirect effect	95% CI	p	Conclusion
Infrastructure → self-management → competence	0.155	0.022	[.004, 0.055]	0.012	Partial mediation
Support systems → self-management → competence	0.194	0.038	[.009, 0.083]	0.010	Partial mediation

Note: Bootstrap sample = 5,000. Confidence intervals excluding zero indicate statistically significant indirect effects.

The complete model explained 39.1% of the variance in self-management and 41.8% of the variance in occupational competence. Thus, the focal organizational resources contributed meaningfully while operating alongside family, social, and personal antecedents.

5. Discussion

This study examined occupational competence development as an organizationally enabled process. The results show that infrastructure and support systems both contribute directly to competence and indirectly through self-management. The findings therefore reject two narrow explanations: competence is neither solely an individual responsibility nor an automatic consequence of organizational investment.

University infrastructure had a significant positive effect on competence. This finding supports the JD–R proposition that job resources facilitate goal attainment and development (Bakker & Demerouti, 2017). Physical and technological resources reduce avoidable constraints and create conditions for teaching, research, information access, collaboration, and continuous learning. In organizational terms, infrastructure establishes the opportunity structure within which competence can be exercised and developed.

Support systems, however, produced stronger effects than infrastructure. Their standardized coefficient was highest for self-management and for occupational competence. This result is consistent with organizational support theory: employees respond favourably when institutional practices communicate care, recognition, and investment in their contribution (Eisenberger et al., 1986; Kurtessis et al., 2017; Rhoades & Eisenberger, 2002). Support systems are likely to be especially influential because they connect organizational resources to employees’ daily work. Mentoring, feedback, administrative assistance, career guidance, and accessible development opportunities help employees interpret expectations and act on available resources.

The mediation findings provide the article’s central contribution. Self-management functioned as a resource-conversion capability. Infrastructure and support systems did not merely influence competence from outside the employee; they also strengthened the employee’s capacity to plan, regulate, coordinate, and sustain professional action. The larger indirect effect associated with support systems indicates that organizational arrangements may be particularly important for activating self-management.

This interpretation adds nuance to the discussion of employee agency. Organizations often treat self-management as a personal characteristic that employees should acquire independently. The present results show that self-management is partly shaped by organizational design. Employees may be more able to plan, prioritize, and persist when procedures are clear, support is accessible, resources are usable, and development is recognized. Hence, organizational support and individual self-regulation should be viewed as complementary rather than competing explanations.

The findings also extend competence research. Traditional competency models often emphasize the attributes associated with effective performance (Boyatzis, 2008; Spencer & Spencer, 1993). The present model highlights the developmental system surrounding those attributes. Competence emerges when organizational resources create opportunities and when employees possess the self-regulatory capability to convert opportunities into sustained behaviour. This resource–conversion perspective may be applicable beyond universities to other professional organizations characterized by autonomy, knowledge work, and long-term performance cycles.

6. Practical Implications for Organizations

First, organizations should avoid treating infrastructure spending as a complete competence-development strategy. Facilities, technologies, and information resources are essential, but their value depends on access, usability, and integration with work processes.

Second, support systems should be designed as a coherent employee-development architecture. High-value practices include structured mentoring, developmental rather than punitive feedback, accessible administrative services, research and teaching assistance, career guidance, recognition, and transparent access to learning opportunities. The stronger coefficients for support systems suggest that these organizational arrangements may generate greater competence returns than isolated material investment.

Third, self-management development should be embedded in organizational practice. Programmes may address goal setting, workload planning, priority management, self-monitoring, emotional regulation, and the coordination of short- and long-term responsibilities. Such training should not be used to transfer responsibility from the organization to employees. It is most likely to succeed when accompanied by supportive systems and adequate resources.

Finally, managers should evaluate competence development using both resource indicators and behavioural indicators. Resource indicators assess whether employees have access to tools, support, feedback, and opportunities. Behavioural indicators assess whether employees can convert these resources into organized learning and effective performance. This dual assessment is more consistent with competence as an organizationally enabled capability.

7. Conclusion

Occupational competence development depends on the interaction between organizational provision and employee self-regulation. Infrastructure creates the material conditions for professional work, while support systems provide the relational and developmental architecture that enables employees to use those conditions effectively. Both resources contribute directly to competence and indirectly through self-management, but support systems exert the stronger influence. Organizations seeking sustainable competence development should therefore combine adequate work infrastructure with coherent support systems and deliberate cultivation of employees' self-management capabilities.

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