Operationalizing the Competency Assessment of Organizational Absorptive Capacity: A Case of a Government Organization

Chulatep Senivongse
Institute for Knowledge and Innovation, Bangkok University, Thailand

Chulatep.s@bu.ac.th

Abstract: This study extends Senivongse's (2023) foundational work on organizational absorptive capacity (ACAP) competency profiling by operationalizing its theoretical insights into a pragmatic assessment framework. Grounded in knowledge management and organizational learning literature, the research develops an operational framework for competency profiling tailored to knowledge workers in organizations transitioning into learning-oriented entities. It synthesizes existing maturity models to propose a competency-based maturity framework, which informs the design of a dual-level questionnaire (managerial and operational) through a Delphi method involving experts in Thai public sector organizational development, human resources, and knowledge management. The methodology employs descriptive statistical analysis and visual analytics (e.g., radar charts, mean graphs) to evaluate competency alignment and gaps within a Thai government agency. Empirical testing reveals granular competency profiles across hierarchical tiers, identifying critical skill disparities and informing personalized development roadmaps for employees. Additionally, the assessment highlights organizational readiness for workforce mobilization and the strategic alignment of role assignments. By bridging theory and practice, this work advances actionable strategies for cultivating ACAP and fostering adaptive capacity in public sector institutions.

Keywords: Absorptive capacity maturity model, Competency assessment, Learning organization, Individual development plan

1. Introduction

Senivongse's (2023) seminal work advances competency scholarship by synthesizing fragmented theoretical perspectives into a unified framework designed to strengthen organizational absorptive capacity (ACAP). The study emphasizes identifying individual competencies to enhance organizational ACAP, offering actionable strategies for human resource (HR) practitioners to develop targeted training initiatives and cultivate a learning-oriented culture. These strategies aim to bolster organizational adaptability in volatile markets, extending practical implications grounded in Senivongse's (2023) research.

The study adopts Todorova and Durisin's (2007) ACAP framework, which refines the foundational constructs by Cohen and Levinthal (1990) and Zahra and George (2002). While ACAP is traditionally conceptualized as an organizational-level capability, Senivongse and Bennet (2024) posit that organizational ACAP emerges from the aggregation of individual competencies. Through recursive processes, these individual-level competencies evolve into organizational capabilities via knowledge creation, sharing, and feedback mechanisms, facilitated by socialization and structural integration.

Methodologically, Senivongse's (2023) draws upon established competency frameworks from prominent scholars, including Bloom (1956), Krathwohl (2002), and Simpson (1966), integrating these with contemporary models from (Hsieh et al., 2019) and Rocha Fernandes et al. (2021). Expert validation underpins the study's findings, advocating for competency management systems that align assessments, developmental interventions, and performance indicators with ACAP objectives. Such systems enable organizations to address skill deficiencies and sustain competitive advantage.

Building on Senivongse's (2023) absorptive capacity competency framework, this research extends its theoretical underpinnings through empirical application. The study seeks to operationalize the competency model within a real-world public sector context—specifically, a Thai government agency—to evaluate its practical efficacy in enhancing organizational ACAP.

2. ACAP Competency Management Model

Senivongse's (2023) competency management model is structured around four core domains: learning capability (cognitive domain), business orientation (affective domain), self-orientation (psychomotor domain), and social intelligence. Collectively, these domains encompass the full spectrum of ACAP development stages: *value identification, knowledge acquisition, assimilation, transformation, exploitation, socialization, appropriability, and feedback mechanisms*. Each ACAP stage is supported by specific competency elements derived from theoretical foundations across multidisciplinary scholarship, with subdomains thematically organized to reflect these interlinkages (see Figure 1).

The model was further refined through integration with Cripe et al.'s (2007) framework, which introduced granular sub-competency indices to enhance precision. To operationalize the framework, two distinct questionnaires were developed: one tailored for organizational leadership (e.g., top management) and another for staff members. Both instruments align with the four primary competency domains, facilitating a dual-perspective evaluation of ACAP alignment within organizational hierarchies.

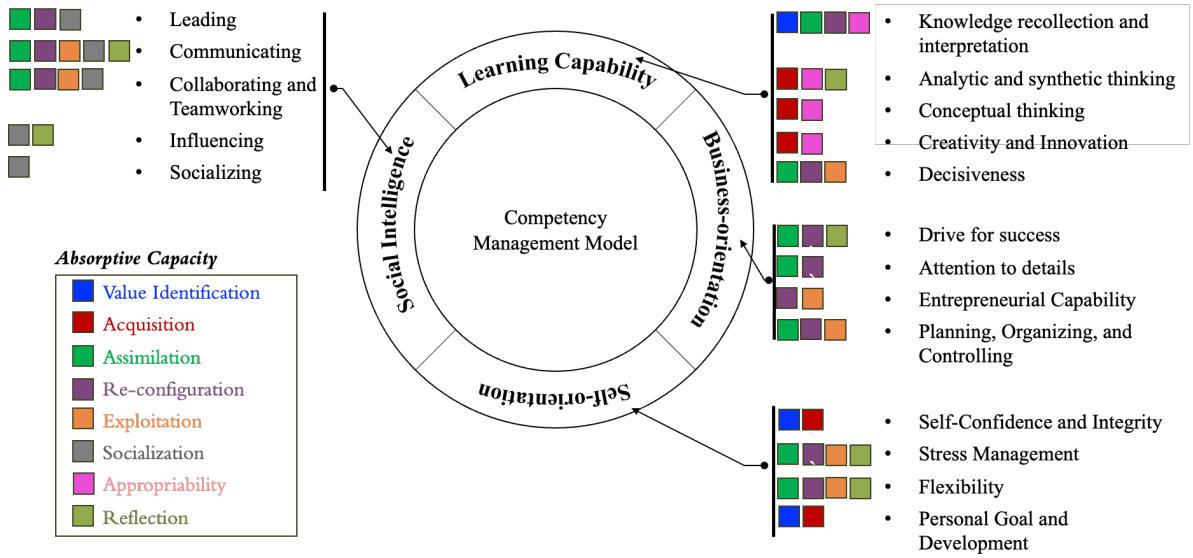

Figure 1: ACAP Competency Assessment Model [Source: Author's own construct from the work of Senivongse's (2023), p. 11-13]

3. Absorptive Capacity Maturity Model

Maturity in knowledge management (KM) refers to the extent to which organizations systematically manage knowledge assets to achieve strategic objectives (Šajeva & Jucevičius, 2010). While many scholars adopt maturity frameworks rooted in the Carnegie Mellon University's Capability Maturity Model (CMM) (Maisiri et al., 2021; Noor Hafizah Hassan & Noreen Izza Arshad, 2023; Portman, 2022; Siahaan & Gunawan, 2021), which is intended as a methodology used to develop and refine an organization's software development process, others propose alternative models, such as the GQC framework (Bougoulia & Glykas, 2023), SAMM Luftman Maturity Level (Dila et al., 2024), BIMM-Business Intelligence Maturity Model (Adekunle et al., 2022), and SPICE-ISO2023 Process Capability Maturity Models (Gökalp et al., 2020). Despite this diversity, the conceptualization of maturity levels remains contested, necessitating further theoretical refinement (Jesus et al., 2022)

The design of maturity scales significantly impacts data validity and respondent engagement. Simplified scales (e.g., 3–5 levels) reduce cognitive burden, particularly for populations with limited literacy or domain familiarity, by simplifying decision-making (Krosnick et al., 2015). However, overly concise scales risk oversimplifying complex constructs, masking nuanced attitudinal differences (Dawes, 2008). Conversely, extended scales (e.g., 7–10 points) enhance granularity, capturing subtle distinctions in psychological constructs like self-efficacy (Preston & Colman, 2000). Yet, excessive length may induce respondent fatigue, undermining reliability (Weijters et al., 2010). Empirical studies suggest 5-point Likert scales optimally balance precision and usability in social sciences, though domain-specific adaptations (e.g., 7-point scales for clinical contexts) may be warranted (Lozano et al., 2012).

The choice between odd- and even-numbered scales hinges on accommodating neutrality. Odd scales (e.g., 5- or 7-point) include a midpoint, reflecting ambivalence and reducing forced-choice bias (Garland, 1991). This aligns with natural decision-making but risks central tendency bias, as respondents may default to neutral options to avoid commitment (Johns, 2010). Even scales (e.g., 4- or 6-point) eliminate neutrality, compelling directional responses that enhance interpretability (Matell & Jacoby, 1971). While advantageous for actionable insights, this approach may frustrate respondents with underdeveloped opinions, increasing non-response rates (Sax et al., 2003). Researchers must align scale design with study aims: odd scales suit exploratory research prioritizing inclusivity, while even scales favor applied studies requiring decisive outcomes (Friedman et al., 1981).

In KM literature, maturity models typically employ 4–6 levels (Bayraktarlı & Topraklı, 2020). Johnson et al. (2008) advocate rubric-based assessments over Likert scales, arguing that descriptive criteria enhance reliability. Stemler (2004) identifies three maturity model development approaches: consensus, expert agreement on performance benchmarks; consistency, correlational validation of scores; and measurement, standardized scoring frameworks.

Given the absence of a universally optimal maturity framework, this study adopts a consensus-driven approach. Through expert deliberation, a 4-level, even-numbered maturity model was selected, aligned with the competency-based proficiency framework of Thailand's Civil Service (Royal Civil Service Commission, 2019). This model defines competency progression across four tiers: foundation, experienced, advanced, and expert. These levels, detailed in Table 1, operationalize organizational capability management for ACAP enhancement.

Table 1: Maturity Levels Used for This Study

Maturity Level	Name	Description
1	Foundation	Individuals at this level demonstrate an understanding of fundamental concepts and can apply them to their own work.
2	Experienced	Individuals at this level comprehensively grasp key concepts, understand the impacts of policy and operational process changes, recognize implications for related activities, and handle increasingly complex and autonomous tasks.
3	Advanced	Individuals at this level exhibit mastery of sophisticated concepts, can define and adapt methodologies, manage workflows, and demonstrate expertise in relevant fields.
4	Expert	Individuals at this level possess advanced knowledge, serve as domain-specific advisors, provide strategic and policy development insights, and act as agents of organizational change.

4. Questionnaire Design

The Delphi method is a structured, iterative research approach aimed at achieving consensus among experts through multiple rounds of questionnaires accompanied by controlled feedback. First conceptualized by the RAND Corporation in the 1950s, it emphasizes participant anonymity, iterative refinement of responses, and statistical synthesis of group input to mitigate biases such as dominant individual influence or groupthink (Best et al., 2025; Skulmoski et al., 2007; Staykova, 2019). Typically spanning two to five rounds—with three iterations being most common—the process continues until response stability or consensus is attained (Best et al., 2025; Skulmoski et al., 2007). Widely utilized in fields such as healthcare, education, and business, the Delphi method supports forecasting, policy formulation, and competency identification (Sablatzky, 2022; Skulmoski et al., 2007). Its adaptability allows customization of rounds or consensus criteria to suit specific research goals. However, its efficacy relies on selecting panelists with deep subject-matter expertise and openness to iterative deliberation (Best et al., 2024). While advantageous for synthesizing expert insights in complex scenarios, methodological rigor is critical to ensuring validity and reliability (Staykova, 2019).

In this study, the Delphi method informed the design of a dual-questionnaire instrument. A panel of three experts—specializing in organizational design, human resource development, and organizational learning—collaborated to delineate competency characteristics aligned with the four maturity stages. Through iterative discussions, the committee refined questions to a consensus, circumventing potential selection bias inherent in Likert-scale approaches. The final questionnaires comprised 42 items for senior leadership and 46 items for government staff, each offering four response tiers corresponding to maturity levels. Table 2 shows an example of a question on technology trends and applications under the creativity and innovation domain.

Table 2: An Example Question on Technology Trends and Applications under Creativity and Innovation domain with different levels of maturity

Maturity Level	Question's Choice Selection
Foundation	I am familiar with the technology that I am using and exploit it to the best of my ability.
Experience	Adoption of new technology is a matter of organization. I understand what it brings, but I will use it only when it is authorized.
Advanced	Staying abreast of technology trends is my preference, and I am always ready to experiment with new ideas.
Expert	I see technology as a way to improve my work and will not hesitate to adopt it and be the change agent

To enhance data robustness, four *probe questions* were embedded to cross-validate alignment between leadership and staff perspectives (see Table 3). These questions served as checks to ensure consistency in responses across hierarchical levels, reinforcing the reliability of the maturity assessment.

Table 3: The design of the Probe questions

Question#	Objective of the question	Top Management Question	Staff Question
1	Involvement in setting of performance measurement index	What criteria do you use to determine performance indicators for your subordinates?	Do you understand and agree with the performance indicators used to evaluate your own work?
2	Process detail understanding and explanation of complex task by management to staff under line of command	When assigned a complex task, are you able to clearly outline the work procedures for your subordinates?	When assigned a complex task, do you receive clear, step-by-step instructions from your supervisor?
3	Openness in giving and receiving critical comments	Are meetings held to gather feedback from subordinates in order to improve work processes?	In your department, are regular meetings held to gather feedback from everyone and use it to improve work processes?
4	Developing and motivating encouragement to reaching common target	Are you able to motivate your team members to perform their duties and achieve the organization's set goals?	Does your supervisor play a role in motivating you to perform your duties and achieve your goals?
5	Communication of strategy to create a shared vision	Do you communicate the vision, strategy, policies, procedures, and direction to subordinates effectively – with a strong emphasis on conveying the vision?	Do you clearly understand the impact of assigned tasks on the strategic direction and goals of the department and organization?

A pilot test was conducted with a sample of 10 respondents to evaluate the questionnaire's reliability. Internal consistency was assessed using Cronbach's Alpha (α)—a statistical measure of how closely related a set of items is as a group, reflecting their ability to evaluate the same construct reliably. Values approaching 1 indicate strong reliability. Results demonstrated exceptional consistency: the executive-level questionnaire achieved an α of 0.922 (92%), while the staff-level instrument yielded an α of 0.904 (90%). Both values denote the *highest reliability*, affirming the robustness of the assessment tools for capturing ACAP-related competencies.

5. Data Collection and Analysis

The Secretariat Office of the Prime Minister of Thailand (SPM) aspires to evolve into a high-performance organization by systematically evaluating the learning capabilities of its workforce. Tasked with formulating policies, advising affiliated ministers and committees, and overseeing human resource management, SPM operates through nine departments and three specialized units directly accountable to its executive leadership.

5.1 Data Collection Process

A self-assessment approach was employed, utilizing two distinct questionnaires: (1) a *competency assessment* instrument for 409 knowledge officers and (2) a *managerial competency assessment* tool for 17 executives. Of the 426 distributed surveys, 324 officers (79.2% response rate) and 15 executives (88.2% response rate) participated. Data collection spanned three months (December 2022–February 2023), ensuring alignment with organizational timelines.

5.2 Data Collection Steps

The assessment comprised two iterative rounds: (1) Baseline Establishment: The first round identified best performers across ten core work disciplines, nominated for their exemplary expertise. This cohort's competencies served as benchmarks for intra-organizational comparisons, enabling alignment of departmental and role-specific performance metrics. Executives were additionally evaluated against peer averages; and (2) Organization-Wide Assessment: The second round extended the survey electronically to all staff, with a one-week response window. Post-collection, data processing and reporting required one month, prioritizing efficiency and accuracy.

5.3 Data Processing and Interpretation

Quantitative analysis, leveraging descriptive statistics, elucidated competency disparities across individual, departmental, and disciplinary criteria. Results were visualized through radar charts and bar graphs to enhance

interpretability. Figure 3 illustrates comparative baselines: Figure 3a reflects average competencies of top management, while Figure 3b benchmarks top performers within each discipline.

Figure 1: Comparative baseline for competency benchmarking: (a) top management baseline; (b) Top performers from each work discipline

Figure 4 synthesizes the outcomes of individual competency assessments, differentiating between leadership and staff perspectives. Figure 4a illustrates the competency profile of top management, while Figure 4b reflects that of an individual officer. Each report is structured into three analytical segments.

Segment 1, Comparative Competency Benchmarking. Displays the individual's competency levels against reference benchmarks, including departmental averages, peer cohorts, and organizational top performers. This comparative lens highlights alignment or divergence from expected proficiency standards.

Segment 2, Priority Development Needs. Identifies and ranks competency gaps based on urgency, emphasizing areas requiring immediate intervention. These insights enable human resource (HR) teams, in collaboration with department heads and job-family specialists, to design targeted development plans aligned with organizational ACAP objectives.

Segment 3, Sub-Category Competency Mapping. Visualizes competency distributions across sub-domains (e.g., cognitive, affective, psychomotor) through comparative plots. This holistic view aids in diagnosing strengths and weaknesses at granular levels, informing strategic talent development initiatives.

Figure 2: Output Report of (a) Top Management Individual and (b) the Officer Individual (Note: the names appearing in this example are redacted.)

The five probe questions served to validate response consistency between top management and staff, ensuring alignment in perceptions of organizational competencies. Figure 5 juxtaposes the assessment results from both groups, facilitating a direct cross-hierarchical comparison. This analysis highlights congruence or divergence in perspectives, offering critical insights into organizational coherence and potential misalignments in ACAP-related practices. By contrasting leadership and staff evaluations, the study underscores areas of strategic unity or discord, informing interventions to harmonize competency development initiatives across tiers.

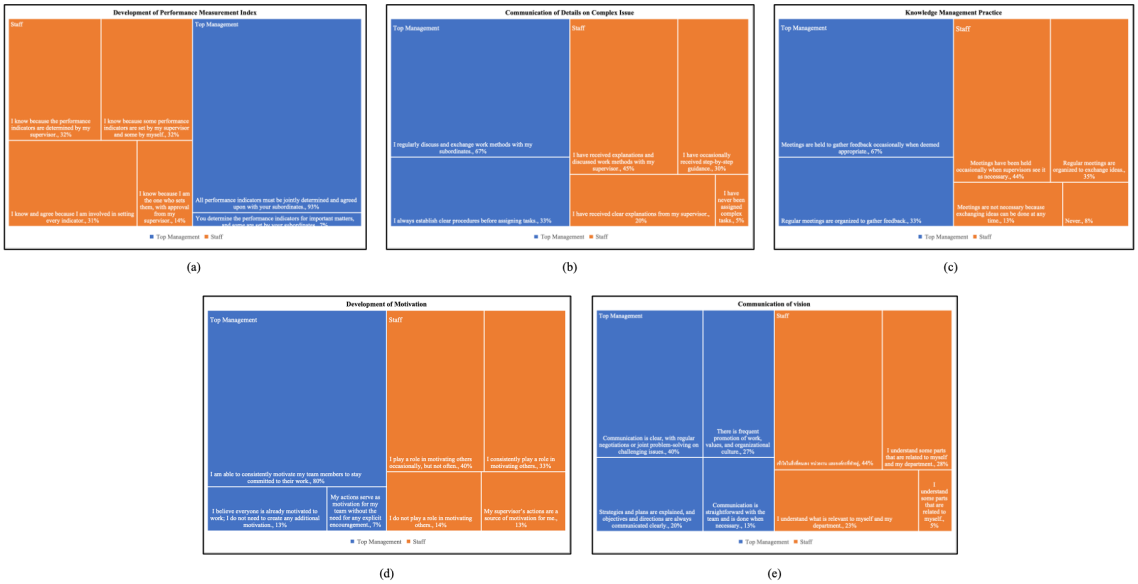

Figure 3: Probe Questions Comparative Results: (a) Development of performance measurement index; (b) Communication details on complex issues; (c) Knowledge management practice; (d) Development of motivation; and (e). Communication of vision and strategy

6. Discussion and Conclusion

Effective competency assessment and management yield dual strategic advantages. First, they facilitate a shift from traditional career ladder promotions, where advancement is based on tenure or vertical performance, to *career stream* readiness, which prioritizes alignment between an employee's competencies and the specific demands of target roles. This approach mitigates the fallacy that success in one role guarantees proficiency in another, fostering a dynamic, skills-based progression system. Second, competency frameworks provide a structured foundation for human capital development, enabling organizations to craft individualized growth plans that align with strategic objectives.

To enhance validity, the study eschewed Likert-scale responses, which risk oversimplification and selection bias. Instead, the Delphi method anchored questionnaire design to real-world behavioral indicators, requiring respondents to engage critically with scenario-based choices. While this increased cognitive load, it ensured responses mirrored actual competencies rather than aspirational self-assessments. Successful implementation necessitated clear communication with stakeholders to clarify that assessments were developmental tools—distinct from performance evaluations—to foster trust and participation.

6.1 Business Implications

The Secretariat Office of the Prime Minister (SPM) aspires to evolve into a High-Performance Organization (HPO), defined by sustained superior outcomes, adaptability, and strategic alignment (de Waal, 2012). HPOs prioritize five pillars: (1) *Leadership Integrity*, trust, accountability, participative decision-making; (2) *Openness and Learning*, risk tolerance, knowledge sharing; (3) *Long-Term Vision*, policy foresight, resilience; (4) *Innovation*, continuous improvement, inimitable practices; and (5) *Workforce Excellence*, diverse talent, targeted development (Manoharan et al., 2023; Paul Kintu & André de Waal, 2021).

The ACAP competency assessment aligns with these pillars by offering a systematic diagnosis of organizational adaptability. Annual assessments can track progress, identify resilience gaps, and inform workforce mobilization strategies, ensuring candidates' competencies align with role requirements before promotions or transfers.

From the fact that knowledge is context-specific and situation-dependent (Bennet & Bennet, 2008), benchmarking with the "best performers" reflects what the organization's efficiency is about. The model acknowledges that optimal competencies vary by role, avoiding unrealistic universal standards. Probe questions further validate alignment between leadership perceptions and staff experiences, particularly in vision communication, feedback mechanisms, and knowledge-sharing practices.

6.2 Limitations

While mitigating response bias, the four-level rubric-based maturity model remains contentious. Critics argue it may lack granularity for precise competency differentiation. However, its design—rooted in expert consensus via the Delphi method—balances cognitive accessibility with practical relevance, prioritizing real-world applicability over theoretical complexity.

6.3 Conclusion

This study operationalizes competency assessment as a catalyst for transforming organizations into learning entities. Mapping ACAP-driven competencies identifies skill gaps, informs personalized development plans, and enhances strategic workforce alignment. Annual implementation is recommended to sustain adaptability, monitor progress, and refine organizational resilience. Ultimately, the framework bridges individual growth with institutional agility, positioning competency analytics as a cornerstone of modern public sector excellence.

AI Declaration: This research employed generative AI in two supplementary roles. First, as the competency assessments were conducted in Thai, AI tools facilitated initial translation of qualitative data into English, with rigorous verification by the author to ensure semantic accuracy. Second, AI-assisted text refinement supported paraphrasing and grammatical precision during manuscript preparation. The author affirms the exclusivity of original content within this work and underscores that all AI-generated outputs underwent meticulous human oversight to align with scholarly standards and contextual integrity.

Ethics Declaration: This study adhered to ethical principles governing non-invasive, anonymized research in organizational settings. All participants were informed of the study's purpose, and their responses were anonymized to ensure confidentiality. Participation was voluntary, with no incentives or penalties tied to involvement. Data were aggregated to prevent individual identification and analyzed solely for academic purposes. The authors affirm no conflicts of interest.

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